The relationship of Stalking to Autism Spectrum Disorders and Personality.

Omer Linenberg, BA/BSc (Joint Hons), MSc

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Abstract

Stalking perpetration represents a challenge in current forensic research practice in terms of identifying perpetrators and formulating their difficulties, and in developing effective treatment. This thesis explores Autism Spectrum Disorders and Pathological Demand Avoidance (a behavioural profile associated with Autism Spectrum Disorders, characterised by extreme methods of avoiding demands, an anxiety-based need for control over the immediate environment, and turbulent interpersonal relationships) and personality trait models in relation to stalking perpetration.

A systematic review identifies the most prevalent clinical factors in stalking perpetration – psychotic disorders and personality disorders. A methodology chapter explores the validity and reliability of online surveys, with emphasis on understanding what makes them suitable for forensic research in the general population, and where the pitfalls may lie.

An empirical study investigates the relationship of Pathological Demand Avoidance and Autism Spectrum Disorders with stalking perpetration and personality traits. Pathological Demand Avoidance traits predicted stalking perpetration and Autism Spectrum Disorders traits did not; a mediation analysis exploring the hypothesis that Pathological Demand Avoidance predicted stalking perpetration by way of strategic emotional control was non-significant, suggesting this was not related to stalking perpetration. The relationship of the HEXACO personality traits model to Pathological Demand Avoidance and stalking perpetration was examined, finding that higher levels of Emotionality and lower levels of Honesty predicted stalking perpetration independently of Pathological Demand Avoidance

A second post-hoc study found that the gender distribution in the sample overall did not impact the relationships found between Pathological Demand Avoidance, Autism Spectrum Disorders, and stalking perpetration. Females in general scored more highly than males on the Emotionality and Extraversion aspects of the HEXACO model, and a Chi-square analysis indicated no significant differences between genders on specific types of stalking behaviours perpetrated.

Authorship Declaration

I hereby declare that no parts of this thesis have been published in the public domain in any way or format.

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Chapter 1: Introduction

Stalking: Why is it a pressing concern?

Stalking is where an individual is fixated and/or obsessed with another, can be exhibited by pattern of persistent and repeated contact with, or attempts to contact, a particular victim (summary of section 2A of the Protection from Harassment Act (UK), 1997). There are multiple clinical and legal definitions for the act of stalking perpetration (provided throughout this thesis), but they all reflect the notion of a perpetrator following a targeted victim without their consent, to a degree that the victim feels significant distress. Stalking behaviours include following the individual to and from home, damaging their property, or sending unwanted messages and gifts; or, with the increasing access and use of the Internet, spreading the victim's personal information and monitoring their social media presence (Cavezza & McEwan, 2014).

The definition which will apply throughout this thesis is as thus: stalking includes behaviours intended to instigate contact with the target; that may be obsessive in nature; that may be construed as harassing or annoying to the target; and may be threatening or violent towards either the perpetrator or the target in an effort to gain a reaction from them. This is intended to cover a wider range of behaviours which may not necessarily come under the legal definition of stalking perpetration, but which may still be disruptive to the victim, and in some cases even instil fear in them.

The Office of National Statistics (2019) found that in 2018-2019, between the ages of 16 to 74, approximately 6.5 million people in England and Wales were victims of stalking, this being done by family or (ex-) partners. Davis, Coker and Sanderson (2002) found that 41% of women and 28% of men in the study sample were stalked by a former intimate partner; indeed, much research has identified that stalking perpetration appears to be part of intimate partner abuse or occurs post relationship dissolution (Coleman, 1997; Dutton & Winstead, 2006; Melton, 2007; Mechanic et al, 2000). Carney and Barner (2012) also found that emotional abuse within a relationship predicted later stalking perpetration.

Davis et al (2002) also found that individuals who reported being victims of stalking perpetration reported higher levels of depression, substance misuse and poor health.

Stalking also extends to public figures, such as celebrities, politicians, and even the British Royal Family (Wilson et al, 2018; Pathé, 2017; Hoffman, 2009; Narud & Dahl, 2015; Every-Palmer et al, 2015; James et al, 2010; Schlesinger & Mesa, 2008). Studies exploring samples of stalking perpetrators in this context have found that psychotic illness and specific types of motivation to contact and approach the targets are prevalent here. In addition, it was noted that stalking perpetrators tended to target individuals in particular occupations, such as Police officers and other justice system professionals; healthcare professionals; and psychologists or psychiatrists (Matos et al, 2020; Sheridan & Pyszora, 2018; Wooster et al, 2016; Mastronardi et al, 2013; McIvor et al, 2008; Gentile et al, 2002). Gentile et al (2002) and McIvor et al (2008) found that psychiatrists and psychologists identified patients who perpetrated stalking against them as having personality disorders, significant childhood trauma, recent significant stresses, and major mental illness such as mood or psychotic disorders. It is possible that specific personality types, personality disorders, or even psychological factors such as attachment organisation and trauma sequelae impact an individual's later propensity to engage in stalking perpetration. Interestingly, several researchers have created stalking typologies relying on previous relationship between target and perpetrator (Zona et al 1993), mental health difficulties (Mohandie et al, 2006), or motivation to engage in the behaviour (MacKenzie et al, 2009). The Stalking Risk Profile (see McEwan et al, 2018) proposes its own typology in terms of pursuit behaviour types and risk management strategies.

Stalking perpetration is overwhelmingly carried out by males: in the UK, the National Stalking Helpline reported in 2011 that 70.5% of stalking perpetrators were male, as opposed to 80% of victims being female (see also Grangeia & Matos, 2018; Spitzberg & Cupach, 2010). Most of the extant literature appears to support this finding, especially in the forensic context (e.g., McEwan et al, 2016; McEwan et al, 2008) but also in community and higher education contexts (e.g., Senkans & McEwan,

2021; Grangeia & Santos, 2018). There are fewer studies solely focused on female samples (e.g., Meloy et al, 2011; Purcell et al, 2001; Strand & McEwan, 2012), but some community-based studies show a larger percentage of female participants (e.g., Johnson et al, 2016; Thompson & Johnson, 2013; Thompson et al, 2012). By and large, female stalking perpetrators appear to differ from male stalking perpetrators on the basis of motivations for stalking and victims: females tend to follow strangers or acquaintances rather than previous partners (Meloy et al, 2011) but where they do follow previous partners, this increases their risk of violence towards the victim (Strand & McEwan, 2012). The motivation for stalking perpetration in females has been replicated across studies (Purcell et al, 2001; Strand & McEwan, 2012; Meloy et al, 2011): to establish a romantic relationship with the victim. Whilst this motivation exists in male perpetrators, it is identified significantly more often in female samples.

However, more recent studies show the gender divide is not as clear as once thought; women were shown to perpetrate more cyber-stalking than men (Smoker & March, 2017; March et al, 2020) and one higher education sample found a higher rate of female stalking perpetrators than male (Wallace et al, 2019). Lyndon et al (2012) suggest that perhaps the definition of stalking perpetration used in studies may impact the results – where more stringent definitions relating to legal prosecution are used, males more often compose the majority of the sample; where the term "unwanted pursuit" is used – which does not necessarily refer to severe forms of stalking including violence – females compose a larger proportion of the sample. It is therefore necessary to further research this issue of gender in stalking perpetration, particularly as empirical studies are sparse.

Stalking perpetration has social ramifications on the well-being and recovery trajectories of victims, but also on the way that the justice and healthcare system can put preventive and interventional structures in place to protect and support the victims. Currently, victims of stalking perpetration report that they struggle to access support and received more diagnoses of mental health conditions than non-victims (Dreßing et al, 2020), and struggled with anxiety, depression, and panic attacks

(Stevens et al, 2020). It is also important that we understand what can be done to support rehabilitation of the stalking perpetrators themselves; psychiatric factors are important to understanding stalking perpetration as it gives an insight into possible drivers for the behaviour, which in turn can give rise to ideas that inform the possible steps we as a society can take to reduce both stalking perpetration and the impact it leaves on victims.

In the next sections, I discuss the importance of understanding the contribution of personality factors; mental health factors; and neurodevelopmental factors to perpetration of stalking.

Personality

Personality refers to a set of traits that an individual may have. These traits are partially determined by genetics (McRae et al, 2002) and by environmental events such as parental caregiving (Bowlby, 1988) and are fairly stable over the lifespan (Terracciano, McCrae & Costa, 2009). It is also important to differentiate between personality trait profiles or models, such as the Five-Factor Model (McCrae & John, 1992) and personality disorders (see Diagnostic and Statistical Manual of Mental Disorders, 5th Edition – APA, 2013; hereafter DSM-5). Personality models tend to indicate levels of different traits which make the character of an individual; disorders, on the other hand, specify particular aspects of an individual's functioning which can cause distress to themselves and others, and differ between different personality disorders. The DSM-5 has three clusters – Cluster A, including Schizoid, Schizotypal, and Paranoid personality disorders; Cluster B, including Antisocial, Borderline, Histrionic and Narcissistic personality disorders; and Cluster C, including Avoidant, Dependent, and Obsessive-Compulsive personality disorders.

With regards to stalking perpetration, Cluster B personality disorders have been found to present fairly consistently especially in forensic samples (E.g., Kienlen et al, 1997; Mullen et al, 1999; Cavezza & McEwan, 2014) but also in community and college samples (e.g., Menard & Pincus, 2012; Johnson & Thompson, 2016; Nijdam-Jones et al, 2018).

The specific contribution of personality disorders to stalking perpetration is further examined in chapter 2.

However, few studies have examined the more general personality trait profiles of stalking perpetrators. Kamphuis and Emmelkamp (2004) identified low levels of the Conscientiousness, Agreeableness, and Emotional Stability traits from the classic Five-Factor Model in individuals who stalked ex-intimate partners; this was consistent with more general personality trait profiles of more antisocial individuals (Miller & Lynam, 2006; Miller et al, 2012). Lee et al (2003) used the precursor of the HEXACO personality model (Lee & Ashton, 2004; H-Honesty/Humility; E-Emotionality; X-Extraversion; A-Agreeableness; C-Conscientiousness; O-Openness) to identify the traits associated with likelihood of sexual harassment in men; they identified the sixth trait, Honesty-Humility (added to the five traits named in the Five-Factor Model to form the HEXACO) as being the strongest predictor of such behaviour. This suggests that while disorders have a role in stalking perpetration, more basic dispositional trait profiles may do too, and it may be beneficial to examine these possibilities in more depth.

Mental Health/Psychiatric Disorders

As mentioned above, mental health and psychiatric disorders have been shown to play a role in stalking perpetration. Most studies in this field (e.g., Kienlen et al, 1997; Mullen et al, 1999; Meloy et al, 2000; MacKenzie et al, 2009; McEwan & Strand, 2012) have identified psychotic illness to be linked with stalking, particularly against strangers or individuals whom the perpetrators wish to approach. However, most studies in forensic settings (and some in the community, e.g., Nijdam-Jones et al, 2018) have also identified other clinical conditions such as delusional (e.g., Zona et al, 1993; Silva et al, 2000), mood (e.g., Catanesi et al, 2013; Savoja et al, 2011) and substance misuse disorders (Thompson et al, 2013). Clearly, there is a variety of mental disorders linked with possible stalking perpetration. It is important, however, to consider where the more severe cases of mental health leading to stalking perpetration are found – in forensic, community, or university samples. In

forensic settings, where more thorough assessments may be completed to examine an individual's mental state (e.g., via Court-ordered psychiatric and psychological reports) it may be likelier to find mental disorders, but this does not mean they are necessarily less prevalent in other settings; for example, Moore et al (2019) found that adults in the community who had psychiatric disorders (particularly substance misuse) had higher likelihood of involvement with the criminal justice system.

Neurodevelopmental Disorders

Three neurodevelopmental conditions have been identified in academic peer-reviewed literature in relation to stalking perpetration: Autism Spectrum Disorders (ASD); Attention Deficit/Hyperactivity Disorder (ADHD); and Pathological Demand Avoidance (PDA). I will briefly review each condition and its relation to stalking perpetration, as this is the main empirical research area of the thesis.

ASD are defined by two major criteria (DSM-5, American Psychological Association, 2013): persistent difficulties in social cognition and communication in multiple contexts; and repetitive behavioural patterns such as routine adherence, fixated and intense interests in e.g., objects or subjects, or particular movements and speech (e.g., echolalia). ASD are also characterised by a lack of Theory of Mind (Baron-Cohen, 2000). This refers to the understanding of another person's mindset, which can be inferred from their actions or speech. Individuals with ASD struggle in this capacity due to social deficits and can therefore struggle to take perspective appropriately in social situations; this may lead to difficulties in forming relationships with others (Orsmond et al, 2004; Kasari et al, 2011) – although somewhat less so for females (see Dean et al, 2017). Individuals with ASD are also generally reported to have a fairly good quality of life but poorer prospects as adults (Howlin, 1997; Billstedt, Gillberg & Gillberg, 2011; Robison, 2019).

It is increasingly recognised that most individuals with ASD do not go on to engage in antisocial behaviours (Murrie et al, 2002). However, a small subset of individuals with ASD do offend (Dein & Woodbury-Smith, 2010);

Im (2016) suggests that particular aspects of ASD may become risk factors for antisocial behaviours and offending in specific cases, particularly where comorbidities or environmental factors may also be present (see also Søndenaa et al, 2014; Allely & Faccini, 2017). Stokes et al (2007) found that adolescents and young adults with ASD were more likely to stalk their peers than others in the same age group without ASD; other studies also found a tendency in ASD to perpetrate stalking though did not explore this relationship directly (Sperry & Stokes, 2017; Stokes et al, 2007; Haskins & Silva, 2006; Howlin, 1997; Post et al, 2014; Post et al, 2014; Dell'Osso et al, 2015). To understand possible predisposing factors to stalking perpetration in ASD, Broadbent (2011) explored task persistence and negative feedback in an adult ASD sample using the Wisconsin Card Sorting Task; it was found that negative feedback on the task actually predicted continued persistence with inappropriate responses, whereas removing the negative feedback resulted in task performance similar to the neurotypical control group. This suggests that perhaps negative social feedback and responses may not be accurately perceived, and so may lead to a risk for continued pursuit of others in individuals with ASD. The relationship of ASD, personality trait profiles, and mental health conditions is not particularly well established with regards to the roles they may play comorbidly in stalking perpetration.

ADHD is defined in the DSM-5 (APA, 2013) by two main criteria: difficulties with attention (e.g. struggling to hold attention on tasks, inability to follow through on tasks due to distraction, avoiding or disliking tasks that require sustained level of mental effort over a long period of time, issues with organisation, prioritization, and time-management); and difficulties with hyperactivity (constant fidgeting and restlessness, excessive talking, impulsive behaviour, or interruption of others during conversations). The diagnostic criteria are stringent in that several symptoms must have begun before the age of 12, have been present for at least 6 months, present in two or more settings, and cause significant disruption to the individual's development and quality of life.

ADHD is linked to marked difficulties in the academic arena (Arnold et al, 2020; Liu et al, 2017; Weyandt et al, 2013; Daley & Birchwood,

2010) and some difficulties with social skills (Wiener, 2020; Kofler et al, 2018; Shaw-Zirt et al, 2005; Mikami et al, 2007). Relevant to this thesis, ADHD has been consistently found to relate to antisocial behaviour (von Polier et al, 2020; Eme, 2017; Young & Thome, 2011; Fletcher & Wolfe, 2009) and to development of antisocial personality disorder (Storebrø & Simonsen, 2016) and comorbidity with borderline personality disorder (Katzman et al, 2017; Speranza et al, 2011; Matthies & Philipsen, 2014). These personality disorders are common in offenders and associated with increased risk of violence and re-offending (Fazel et al, 2018; Yu et al, 2012).

Clearly, the prevalence of ADHD in the forensic sector is relevant to this thesis in the context of the relationship of neurodevelopmental conditions to stalking behaviours. Fletcher and Wolfe (2009) suggest that this may be in part due to limited prospects resulting from poorer academic performance, and in part due to the symptom of impulsivity driving offending behaviour. ADHD is therefore included alongside ASD and PDA under the umbrella of neurodevelopmental disorders explored here.

PDA was initially identified by Elizabeth Newson in the 1980s as an atypical autism. Newson, Le Maréchal and David (2003) consolidated the observations from Newson's clinical work and constructed the first clinical definition of PDA. Later studies, such as Eaton et al (2018) and Woods (2019) proposed additional early symptoms and discussion about the diagnostic relationship of the PDA profile to ASD. The profile's most visible symptom is the extreme to which individuals with PDA will go to avoid perceived demands; these demands are not simply tasks which are perceived to be difficult but can be any activity of daily living, such as maintaining personal hygiene or eating. The tactics of avoidance, importantly, are noted to be socially strategic in nature – similar to manipulation or control over others (see Eaton, 2018). O'Nions et al (2018) described strategies such as distracting the person making the demand, feigning illness, or attempting to negotiate the terms under which the demand is met. Newson et al (2003) suggested that in extreme cases, individuals with PDA may resort to threats of violence or

outrageous behaviour to avoid a demand; in some cases, there may also be a crisis state, similar to extreme anxiety (Eaton, 2018) in which the individual loses the ability to respond to their surroundings, usually accompanied by violent behaviour such as screaming, kicking, biting, punching, and property damage.

In addition to the extreme avoidance of demands, Newson et al (2003) also identified a surface sociability: this means being able to appear sociable enough to hold a conversation, but without a sense of social identity (ability to understand one's own position in relation to others around them; Graham-White, 2002, this was identified via the expressive language usage specific to children with PDA). Lability of mood and impulsivity are common, and the mood fluctuations have also been described by O'Nions et al (2014; 2018) as a "Jekyll and Hyde" presentation – for example, going from loving to angry almost spontaneously. Finally, Newson et al (2003) identified the way individuals with PDA avoid demands as almost obsessive, with a focus on continuing to avoid the demand as much as possible. They also noted that sometimes this obsessionality extends to persons (a trait also seen in other ASD – Eaton, 2018). O'Nions et al (2014) and Eaton (2018) describe PDA as being motivated by an anxiety-based need for control, which characterises the relationships individuals with PDA have with those around them.

It important in this context to note criticism of the PDA profile: Green et al (2018) argue that PDA encompasses a range of co-occurring symptoms that may occur in ASD or via attachment difficulties and does not have a basis for a separate diagnostic entity (although Eaton et al, 2018, are able to delineate specific symptoms of ASD, PDA, and attachment difficulties in assessment of children). Woods (2019) discusses at length the importance of placing Demand Avoidance Phenomena (his definition of PDA) in the context of behaviours in ASD, suggesting that perhaps demand avoidance is not necessarily 'obsessive' as noted by Newson et al (2003) but rather appears that way from a neurotypical perspective on ASD, whereas to the ASD individual experiencing demand avoidance it is completely rational and context-appropriate. It is possible that the adjective 'obsessive' in the context of PDA may be inappropriate to characterise the behaviour of the individual – in which case a different

adjective would be more helpful to describe the lengths to which individuals with PDA would undertake to avoid demands due to extreme anxiety. The debate around the validity of PDA as a diagnostic profile, however, should not detract from the evidence that it exists and that the symptoms in the profile do tend to cluster together and even score differently on ASD assessment tools such as the Diagnostic Interview for Social and Communications Disorders (DISCO; O'Nions et al, 2016). It is clear that more research is required to understand the relevance of specific symptoms and behaviours to functioning of children and adults who are given this label. The recommendation of the National Autistic Society (2019) is to receive ASD assessments which can detail the behavioural profile of the child – including PDA; this then helps signpost the family and professionals to the appropriate support network.

The relevance of the PDA profile to antisocial behaviours must not be discounted, and further researched - as violent and turbulent behaviour is described as common within the behavioural profile. Egan et al (2019) found that higher levels of PDA traits in individuals in the general population predicted higher levels of antisocial behaviours. A personality dimensions profile (based on the Five-Factor Model, Costa & McCrae, 1992) was also explored, finding that it was similar to the Five-Factor Model personality profile noted in offending populations and suggesting a possible explanation as to why individuals with higher levels of PDA traits would be more at risk of engaging in antisocial behaviours. Eaton (2018) suggested that there are similarities between ASD and PDA profiles in adults to profiles of borderline personality disorder, to the extent of misdiagnosis of one as the other; as with the link between personality disorder and antisocial behaviour discussed above, it is possible that the overlapping traits are related in some way to antisocial behaviour (although this will not be directly explored in this thesis).

Due to the PDA's profile of extreme need for control and socially strategic engagement with others which can lead to turbulent relationships – as well as the noted obsessionality towards persons – it is possible that individuals with PDA may be at risk of escalating to stalking perpetration.

The Present Thesis: What's the relationship?

On the basis of evidence presented above, the main aim of this thesis is to explore the relationship of stalking perpetration and neurodevelopmental disorders. It additionally seeks to expand the evidence base on how personality trait profiles possibly contribute to stalking perpetration, especially in neurodevelopmental disorders.

Expanding the understanding of these relationships is important for several reasons. Firstly, any research into the field of neurodevelopmental disorders and the role they may play in antisocial or offending behaviour is essential, as it may provide insight into cognitive or behavioural traits that may inadvertently drive neuro-diverse individuals into offending. As discussed above, there is a significantly higher prevalence of individuals with ADHD in forensic as opposed to community settings, and this is suggested to be largely due to impulsivity; the link between ASD and antisocial or offending behaviour is less clear (see Murphy & King, 2014) but as e.g., Broadbent (2011), Im (2016), and Post et al (2014) indicate there is enough evidence to suggest symptoms of ASD such as inappropriate response to misread social cues may drive offending. Individuals with PDA may come into contact with the Criminal Justice System – but may be given other diagnoses or labels, and it may be difficult to estimate the true prevalence rate of PDA in the forensic context for this reason. Symptoms of PDA, particularly the need for control over their environment, may drive specific offending behaviours, though more research is required to identify what specific offending behaviours these may be. Therefore, one specific aim of this thesis is to consider the PDA behavioural profile in relation specifically to stalking and attempt to assess whether this need for control over others, operationalised as emotional coercion, could drive the perpetration of stalking behaviour in individuals with PDA.

A second reason to expand the relationship of stalking perpetration, neurodevelopmental disorders (ASD, ADHD, and PDA) and personality trait profiles is specifically to understand the contribution of personality traits in neurodevelopmental conditions to stalking; it may be that it is not the mental disorder which is the problem but the conjunction of the disorder with a difficult temperament, so many persons with that mental disorder

will not engage in that behaviour. There is a significant lack of studies exploring personality traits in relation to stalking (as opposed to the association of personality disorders with this outcome). This would be helpful in distinguishing which neuro-diverse individuals may be more predisposed towards perpetrating stalking behaviours, as this would inform preventive and interventional programmes to be specifically tailored, and perhaps decrease likelihood of re-offending.

Finally, the importance of clarifying these relationships lies in their implications. In the legal arena, having a neurodevelopmental disorder (or any mental or personality disorder) in and of itself is not a legal defence. It may be considered a mitigating circumstance in some cases, which can affect the sentencing process (Sentencing Council UK, 2018), but at the discretion of the Court and potentially requiring external expert advice. In the context of stalking perpetration, then, it is important to consider whether an individual meets criteria for mental disorder as a mitigating circumstance. To do this, the judiciary should be trained in understanding the implications of mental disorder – for example, neurodevelopmental disorders such as ASD and ADHD (see Creaby-Attwood & Allely, 2017). In the clinical context, individuals who are referred for evaluation or treatment for stalking perpetration would benefit from their clinicians having access to the most up-to-date research on clinical conditions likely to present in this cohort and may support creating tailored risk management plans.

This thesis poses the following research questions:

1. What is the relationship of PDA and ASD to stalking perpetration? Part of this research question also seeks to address what relevant symptomatic aspect of PDA may drive stalking perpetration. It is posited that the need for control, operationalised as emotional coercion, is key. This research question is first addressed via a systematic review (chapter 2) which assesses the contribution of clinical factors in general to stalking perpetration. It is then studied empirically in chapter 4.
2. What is the relationship of specific personality traits – both within and out of the neurodevelopmental context – to stalking

perpetration? This is studied using the HEXACO model, a 6-dimensional model of personality traits, which follows the FFM model with the addition of the Honesty-Humility trait. It is hypothesised that this personality trait model is relevant to understanding offending behaviour, as the Honesty-Humility trait was found to predict antisocial and offending behaviour (Lee & Ashton, 2004; Rolison et al, 2013). This is studied empirically in chapter 4 and examines the relationship of all six personality traits in the model to stalking perpetration and neurodevelopmental disorders.

3. Finally, a post-hoc analysis was carried out as it was noted there were significantly more females than males in the sample. Extant literature indicates mixed findings with regards to gender distribution in stalking perpetration, and it is important to understand whether the current sample's findings align with this literature – and if not, why that might be the cases. It is also important to explore whether the differences in gender distribution in this sample have a specific relationship with ASD and PDA. It is hoped that this analysis, explored in chapter 5, may help shed light on the intersection of potentially antisocial behaviours, gender, and presence of ASD and PDA traits in the academic and general populations.

Chapter 2: The Presence and Influence of Clinical Factors in Stalking Behaviour – A Systematic Review

Abstract

Aims: Multiple clinical factors are involved in the perpetration of stalking behaviours. It is important to assess what clinical factors contribute to various aspects of stalking behaviours, as this may lead to better identification and case-formulation of stalking perpetrators, as well as new directions for further research.

Methods: two databases were searched and a total of 19 studies suitable for inclusion identified.

Findings: Studies examined clinical factors such as mental health status, personality disorders diagnoses, and demographic variables, as well as effects of these on aspects of stalking perpetration such as persistence, duration, and recidivism. Most studies were conducted in forensic and medico-legal samples, with few recruiting community samples. Most participants in forensic samples were male, with a more even gender distribution in community samples. The main clinical factors implicated in stalking perpetration were psychotic illnesses, personality disorders, and substance misuse disorders.

Conclusions: Further research into other clinical factors – such as neurodevelopmental disorders – needs to be conducted with higher quality studies. Further research into substance misuse disorders and personality disorders in the context of stalking perpetration are also warranted.

Introduction

The phenomenon of stalking has a number of different definitions and defining terminologies, including "unwanted pursuit behaviours" (Langhinrichsen-Rohling et al, 2000) and "obsessive relational intrusions" (Spitzberg & Cupach, 1998) as well as varying legal definitions (see chapter 1 for summary of the legal UK definition). All definitions of the concept share the notion that stalking is fundamentally a behaviour causing discomfort and distress to a target due to its non-consensually intrusive nature. Stalking behaviours may take many forms – following the target by foot or driving by their house or workplace; sending unwanted items, letters or emails, or making unwanted telephone calls; breaking into the target's home; finding the target on the Internet or spreading their private details without their consent; and can result, in some cases, in physical and sexual violence.

The current literature on stalking has progressed considerably since the identification and initial criminalisation of the behaviour in the early 1990s. The earlier studies, such as those by Menzies et al (1995) and Mullen and Pathé (1994) focussed on erotomania and related delusional disorders in medical and forensic contexts; others studied samples of convicted offenders charged with stalking and began to identify common trends in this population (Meloy, 1996). Such trends identified subjects with erotomania were more likely to have perpetrated stalking against their targets if they had a previous history of antisocial conduct unrelated to the delusional features of their disorder.

Classification systems emerged, such as Zona et al's (1993) three-category system on different types of obsessive stalking perpetrators, differentiating delusional or erotomanic perpetrators from non-delusional obsessive perpetrators; and Mohandie et al's RECON typology (2006) which differentiated between types of stalking perpetrators according to their relationship to their victims, namely whether they were previously in an intimate relationship or not.

Since some of the early studies indicated past partners of stalking perpetrators were often targeted, Palarea et al (1999) studied the relationship between stalking, domestic violence, and abuse, and found

increased violence between stalking perpetrators towards previous partners compared to stalking perpetrators without a previous relationship to their target. The literature indicated previous partners were more likely than other individuals in the general population to perpetrate stalking behaviours towards their ex-partners, especially post relationship dissolution (Douglas & Dutton, 2001; Dutton & Winstead, 2006; Melton, 2007; Senkans et al, 2021). Studies regarding stalking perpetrators preoccupied by public figures and health professionals found that individuals who perpetrated stalking against public figures were more likely to have a mental health condition, less likely to use threatening language, and more likely to incorporate requests for help in their communications (Pathé, 2017; Meloy et al, 2011; Meloy et al, 2008). In addition, McIvor et al (2008) found perpetration of stalking behaviour by patients of mental health professionals was a significant problem in healthcare and was mostly perpetrated by males with personality disorders or major mental illness.

Finally, the mental health and psychiatric disorder status of individuals who have committed stalking-like behaviours has also been studied. The initial studies completed in the 1990s identified delusional disorders and other psychotic symptoms as highly prevalent; other studies (see Meloy, 1996) have identified personality disorders and substance abuse as prevalent in this population; and some studies have identified neurodevelopmental disorders such as Autism Spectrum Conditions as also being present in individuals who have perpetrated stalking behaviours (e.g., Dell'Osso et al, 2015; Haskins & Silva, 2006).

Due to the multiple factors involved in the perpetration of stalking, it is important to understand the role that each may play; it cannot be assumed that individuals with differing clinical disorders all perpetrate stalking behaviours for the same reasons – as the research on stalking typologies suggest – and this enables more robust methods of identification, prevention, and intervention to be developed and tailored to different individuals who perpetrate stalking. This chapter examines whether the mental health and psychiatric disorder status (hereafter 'clinical factors/diagnoses') of individuals who perpetrate stalking

behaviours contributes to or impacts the perpetration of stalking behaviours, and the nature of these behaviours in medico-legal and community contexts. This systematic review examines studies focusing on populations of individuals who have perpetrated stalking and whether any clinical diagnoses were made in the samples (of mental health, personality, or other conditions); whether any comparison groups – individuals who perpetrated stalking behaviours but did not have diagnoses of clinical or psychiatric conditions – were assessed to establish if the clinical diagnosis status was significantly different with respect to stalking perpetration and specific stalking behaviours; and what associations researchers were able to identify between clinical factors present in studied samples and the stalking behaviours they perpetrated.

Methods

1. P.E.C.O and Eligible Study Designs

Population

Eligible studies were required to use samples of adults (over the age of 18) who were either found via the medico-legal system (e.g., referrals to specialist clinics, casefiles from criminal justice or police units, etc.) or self-reported stalking behaviours in studies conducted with higher education or community populations. This ensured both low and high severity stalking behaviours are examined, as not all stalking behaviours may lead to criminal justice system involvement (for example, if they are not reported). Studies examining public and professional figures harassment (e.g., mental health professionals) were not included as it is possible that stalking perpetration towards such figures is different from harassment of targets who are not necessarily well-known or have a particular status. This also makes the systematic review more applicable to the sample used in the empirical chapters, who did not report pursuing such victims.

The initial scope found some studies which assessed stalking in juvenile samples and were separate from studies with adult samples. As a systematic review in this area has not been previously completed, it was

decided for simplicity the population sampling should include adults only. Studies were not limited by sample gender as despite medico-legal samples being replete with male participants, it is possible that this would not be the pattern with higher education and community samples.

Intervention/Exposure

This review focuses on existing factors in stalking perpetrators, and therefore it was more appropriate to define this eligibility criteria as 'exposure' rather than 'intervention', no independent variables being introduced experimentally to the samples to assess a specific change in outcome. Eligible studies were required to show that mental health or psychiatric disorder constructs were part of the primary or secondary hypotheses; that the mental health factors or diagnoses were made via a recognised diagnostic system, such as the Diagnostic and Statistical Manual (DSM) or the International Classification of Diseases (ICD) and that it was the most up-to-date edition available at the time of the study; and that the clinical factor or diagnosis was one of the variables statistically analysed in relation to the stalking behaviour. This was an exclusion criterion for studies which utilised non-random samples and focussed on describing the sample rather than analysing possible relationships between the factors present in the sample, and the outcome of stalking behaviours perpetration.

Controls/Comparison

The presence of a control or comparison group was not a necessary eligibility criterion. However, where comparison groups were utilised, the assignment to the groups required clear and justifiable method of doing so. The comparison groups also needed to have a clear link to the outcome behaviours in terms of mental health factors and diagnoses.

Outcome

The outcome criteria were defined as the presence of analysis, discussion, and conclusions regarding whether a specific mental health factor or diagnosis showed a definitive trend of relation or non-relation to any stalking behaviour, including whether it delineated different types of

stalking perpetrators (as defined by the study) or predicted outcomes such as risk of further stalking perpetration or specific stalking behaviours.

Study Design

The study design and method of data collection (e.g., archival, or several sample sources) did not impact the eligibility of a study. Due to the nature of the population and the exposure criteria, cross-sectional studies were the most likely studies to be reviewed and selected, though single-case and case-series were not excluded if there was evidence that analysis or structured clinical judgment and discussion was undertaken on mental health factors in relation to the stalking behaviour.

Table 2.1 P.E.C.O Summary Table.

Population	Exposure	Control	Outcome
• Over 18. • Medico-legal, community, or higher education samples. • No specific gender samples required. • No stalking perpetration of public figures	• Mental disorders or conditions part of primary or secondary study and statistically analysed in relation to stalking. hypotheses • Recognised diagnostic manuals used for assessment.	• Control group not necessary – but if used, required to be related to examination of mental health diagnoses and outcomes.	• Clear analysis, discussion and conclusion about whether a mental health factor/diagnosis was related or not to stalking perpetration, including future risk or specific stalking behaviours.

2. Information Sources, Search Strategy, and Study Selection Process

Information sources

The databases searched were accessed via the OVID platform:

- PsycINFO
- Ovid Medline®, 1946-2020

Additionally, the West Law legal database was accessed, as well as grey literature via Google Scholar.

All studies on stalking perpetration published or present on the OVID platform before February 2020 were eligible. In addition, any theses published online but not in journals were also eligible for inclusion provided they met criteria.

Search Strategy

Search terms were inserted in separate search lines based on query topic, mapped onto relevant subject headings, Boolean functions used, and the term "exp". The "explode" function includes all papers under a specific subject heading – e.g., below where "mental disorders" is used, this function leads to all papers under the subject heading "mental disorders" to be searched for the relevant terms.

Line 1: exp Psychopathology or exp Mental Disorders or (psychopathology or psychiatric disorder* or mental illness*)

Line 2: exp Developmental Disabilities or exp Developmental Disorders or exp Autism Spectrum Disorders or exp Attention Deficit Disorder with Hyperactivity or exp Neurodevelopmental Disorders

Line 3: exp Personality Disorders or (personality or personality disorder* or personality factor* or personality trait*)

Line 4: exp Stalking or (stalk* or harass* or antisocial behaviour or unwanted pursuit or persistent pursuit or obsess* following or obsessive relational intrusion or stalk* violence or stalk* risk or cyber*stalk* or cyber*harass*)

Line 5: 1 or 2 or 3

Line 6: 4 and 5

Study Selection Process

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement (PRISMA; Moher et al., 2009) provided a selection structure for studies using a peer-reviewed flow diagram method (see results section). This process includes identifying studies through selected databases, screening, identifying, and finally, selecting the eligible studies. In this review the studied were initially screened via title and abstract check; further screened via reading the full text; and finally identifying the appropriate studies via checking them against a data extraction form.

3. Data Collection and Quality/Bias Assessment

A data extraction form was compiled, using the P.E.C.O structure of this review as a guideline for the relevant questions (see appendix A). The form also included questions about the design of the study, such as how the samples were chosen by the authors, and what methods were used to ensure as little risk of bias as possible.

In order to assess the quality of the studies selected in the eligibility stage, Kmet, et al's (2004) Quality Assessment Criteria for primary research papers was used. This system used a quantitative scoring method, resulting in a decimal value assigned to each study once all criteria were checked. The authors advised that conservative values were above 0.75, showing higher quality in the research study. Therefore, this was the numerical value under which studies were eliminated if all other criteria for eligibility were met. See appendix A for full calculations.

The studies were summarised in a table, and themes were qualitatively synthesised. This was due to not all studies using the same statistical analysis methodology and not all studies reporting their effect sizes, precluding statistical integration. Despite the partial lack of effect size reporting, studies were included as the analysis and relation to outcome were still deemed as robust.

The search was completed on 23/02/2020.

Results

The PRISMA flow diagram below summarises the search process.

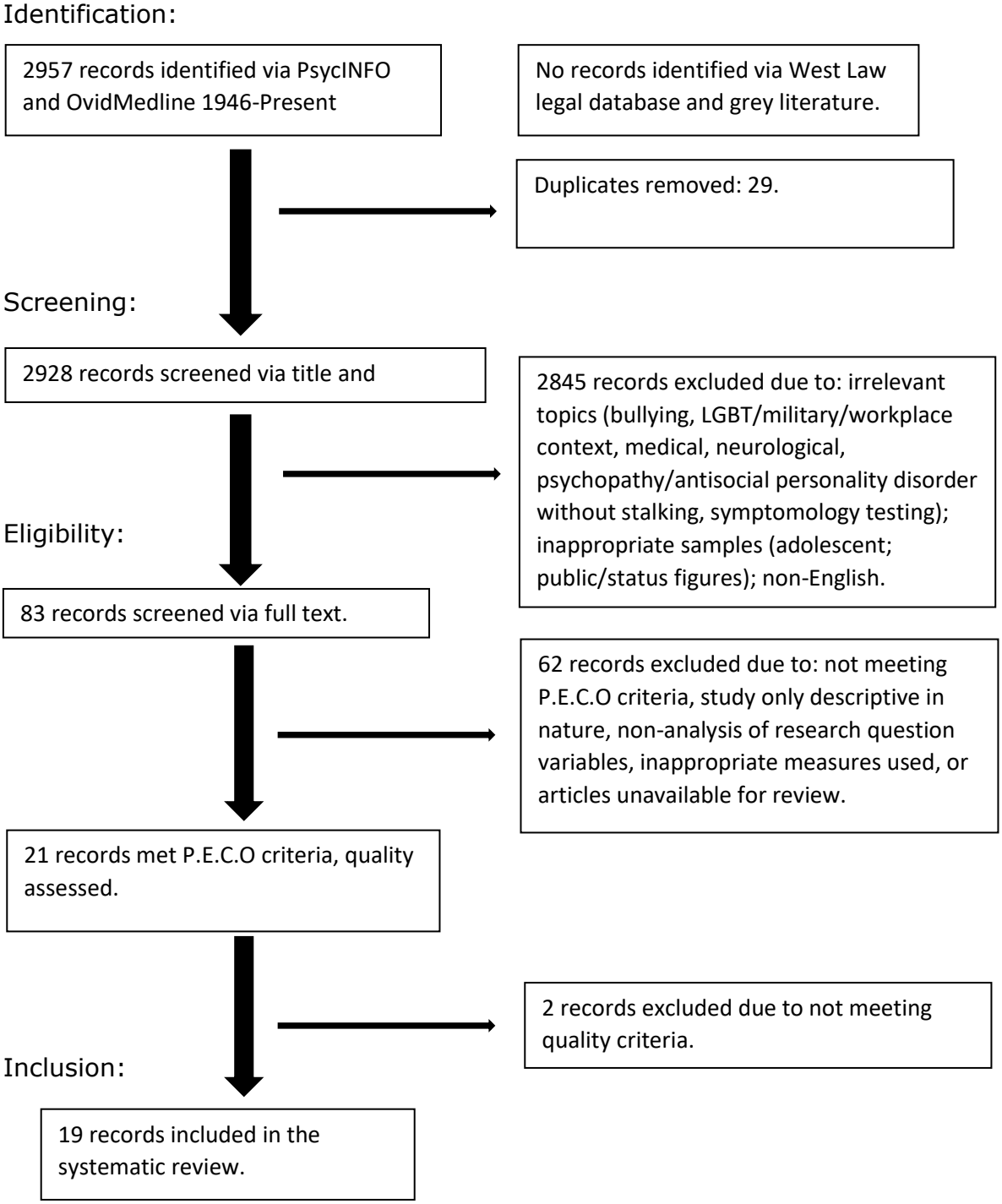

Figure 2.1 Flow diagram of study inclusion process.

Table 2.2 Summaries of studies included in the systematic review.

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
Cavezza & McEwan (2014).	N=271, 94% Male. Referral sample from forensic clinic.	Cyber (ON) versus offline (OFF) stalking perpetrators (those who used the internet and those who did not). χ^2 test; Fisher's exact test; t-test; Mann-Whitney U-test.	DSM-IV-TR; MCMI-III; SCID-II.	More OFF perpetrators had psychosis (17%) but non-significant. More ON perpetrators had mood disorders (31%) but non-significant. Comparable levels of personality disorder in both groups (ON=61%; OFF=53%). N=1 in both groups had autism; N=1 had learning disability in ON group; N=2 had paraphilias in OFF group. No other analyses on clinical factors were completed.	Generalisability bias – forensic sample so may not generalise to community or college populations perpetrating cyber-stalking. Quality Score: 0.81
Eke, Hilton, Meloy, Mohandie & Williams (2011).	N=78, 94% Male. Randomised sub-sample from Mohandie et al. (2006) dataset (see below).	No comparison groups. Pearson's *r* and Receiver Operating Characteristic (ROC) analysis.	DSM-IV-TR. 79% had previous contact with mental health services, binary present/absent rating. 22% presented with substance misuse problems at time of index offence.	Prior mental health diagnosis (any) predicted any incidence of stalking perpetration and non-violent recidivism ($r = .26$, $p < .05$, AUC = .61, CI (95%) .49-.74; $r = .25$, $p < .05$, AUC = .63, CI (95%) .49-.76). Substance use problems predicted any violent recidivism, $r = .35$, $p < .05$, AUC = .69 CI (95%) .54-.84.	Possible sampling bias due to this being a subset of a previous dataset – however, datapoints selection was randomised. Possible generalisability bias – less likely to apply to individuals in the community outside the United States, and less likely to reflect healthcare settings. Quality Score: 0.9
James & Farnham (2003).	N=85, 85% Male. Medico-legal service referrals.	No comparison or control groups. χ^2 test; t-test (two-tailed); relative risks (RR) with 95% confidence intervals (CI); logistic	DSM-IV. 66% of sample were schizophrenic; delusional; bipolar (manic episode); or had major depression. 24% had personality disorders (any).	Only diagnosis of major depression had significant relationship with serious violence – Fisher's exact test, two-tailed – p=.001, RR=3.37 (CI 1.62-4.02). Homicide in stalking was associated with absence of substance misuse (Fisher's exact test, p=.044) and absence of psychotic diagnosis (Fisher's exact test, p=.045).	Sample bias – forensic sample only, which is likely to capture only the more serious cases of stalking perpetration; therefore, also giving rise to generalisability issues in extending these findings to community cases.

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
		regression; ANOVA; Fisher's exact test.	N=3 head injuries (no analysis); N=3 substance misuse cases.		Measurement bias – issues with analysis, no corrections for multiple-testing; possible sample size was small. Quality Score: 0.95
Johnson & Thompson (2016).	N=637, 75.2% Female. Sub-sample of ex-intimate stalking perpetrators from stalking perpetrators database (community sample, East Australia)	No comparison groups. χ^2 test – no Bonferroni correction applied.	PDQ4 – Borderline and Narcissistic subscales only (assesses DSM-IV criteria). 24% of sample had Borderline traits; 19% Narcissistic traits; 8% had both.	No significant relationship between Borderline traits and stalking persistence - χ^2 (2, 601) =1.87, p=.39, Cramer's V=.05. No significant relationship between Narcissistic traits and stalking persistence - χ^2 (2, 637) =.66, p=.72, Cramer's V=.03.	Measurement Bias – PDQ4 subscales used rather than full measure; possible other personality disorders were missed as a result. Quality Score: 0.81
Kienlen, Birmingham, Solberg, O'Regan & Meloy (1997).	N=25, 84% Male. Non-random offender sample referred for competency to stand trial assessment. Recruitment bias resolved by assessors being blinded to study hypothesis.	Comparison groups – individuals with psychotic symptoms and individuals without psychotic symptoms. χ^2 test.	DSM-III-R. 35% of sample presented with psychotic symptoms at time of index offence. 65% of sample presented without psychotic symptoms – 46% had a personality disorder diagnosis. 28% had substance misuse histories.	38% of psychotic individuals perpetrated stalking against an ex-partner; more likely to visit their victim's home, $\chi^2 = 6.62$, $p < .05$. 71% of the non-psychotic individuals perpetrated stalking against an ex-partner, and 88% verbally threatened their victims – significantly more than psychotic individuals, $\chi^2 = 4.36$, $p < .05$. Non-psychotic individuals were also more violent, although this was non-significant.	Possible reporting bias – cases selected based on presence of stalking behaviour; possible that some cases had elements of stalking but did not meet legal criteria for definition of crime and individuals were not prosecuted for it, thus not included in the sample. Quality Score: 0.75

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
McEwan, Mullen & MacKenzie (2008).	N=200, 89% Male. Non-random referral sample from a treatment clinic; exclusion of severe mental health or learning disability precluding gaining consent. Motivation also assessed via decision-making tree from Mullen et al (2006).	Comparisons of motivational perpetration type – 90% of those who stalked past partners were Rejected type; 69% of those who stalked acquaintances were Resentful type; 73% of those who stalked strangers were Incompetent type (Mullen et al, 2006) Odds ratio (OR) with 95% confidence intervals (CI 95%); χ^2 likelihood ratio; multivariate logistic regression; ROC analysis	DSM-IV-TR; MMPI-II; MCMI-III. 16% of sample diagnosed with Schizophrenia, 14% depression, 11% substance misuse. 20% diagnosed with personality disorders. 7% diagnosed with learning disabilities.	Perpetrators stalking for a period between 12 and 52 weeks and classed as "moderate risk" were identified by presence of personality disorders or problematic personality traits; and loitering, spying on, or writing to their targets (AUC =.75, 95% CI=.64-.87). Female perpetrators showed 2.5 more psychosis diagnoses than male perpetrators. Psychosis was correlated with stalking persistence over 52 weeks but excluded from final analyses due to strong correlation with intimacy-seeking motivation.	Measurement and sampling bias: researchers were not blinded to potential predictor variables as sample was based on referrals of convicted individuals. Possible generalisability bias – study sampled in forensic settings so may have overestimated prevalence and severity of mental disorder and stalking behaviours. Quality Score: 0.95
McEwan, MacKenzie, Mullen & James (2012).	N=211, 90% Male. Non-random medico-legal	Comparison of ex-intimate stalking perpetrators and non-ex-intimate perpetrators. Communicators (making any contact) and "Approachers" (physically present near target or any physical approach to the target) used to assess	DSM-IV-TR; MMP-II; MCMI-III; clinical interviews. In Ex-intimate perpetrators: 49% Axis 1 (psychosis, depression, substance misuse), 50.7% personality disorders Non-ex-intimates: 70% Axis 1, 41.4% personality disorders.	Non-ex-intimate perpetrators more likely to be psychotic - χ^2=11,350, p=.001; OR=4.39, CI (95%) =1.76-10.87. Non-ex-intimates "Approachers": more likely to have psychotic illness, OR = 3.83, CI (95%) = 1.38-10.66. Non-ex-intimates who escalated from communication to approach: more likely to have psychotic illness, OR= 5.31, CI (95%) =1.79-15.77.	Measurement bias – statistical analyses were declared to be exploratory so less corrections were used in cases of multiple analyses. Sampling bias – mental health diagnoses possibly over-represented in sample due to context from which data collected. Quality Score: 1

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
		escalation of stalking perpetration. Odds ratio (OR); χ^2 test; Fisher's exact test.		Communicators had more non-psychotic Axis 1 diagnoses (OR= 2.63, CI (95%) 1.10-6.33).	
McEwan & Strand (2013).	N=211, 90% Male. Non-random medico-legal Exclusion: severe mental health or learning disability precluding gaining consent.	Groups of stalking perpetrators classified according to relationship to their targets: ex-intimates, acquaintances, and strangers. Odds ratio (OR) with 95% confidence intervals; χ^2 test; Fisher's exact test; Mann-Whitney *U* test and Kruskal-Wallis test. Bonferroni corrections used in post-hoc analyses.	DSM-IV-TR; MMPI-II; MCMI-III; RECON stalking classification. Axis 1 diagnoses: psychosis, depression, bipolar affective disorder, anxiety, paraphilia, autism, learning disabilities, and substance misuse disorder. Axis 2 diagnoses: Personality disorders (PD) from clusters A-C, cluster B being most prevalent (20.85% of the total sample).	71% of the strangers group received axis 1 diagnoses versus 48% of the ex-intimate group – a significant difference (χ^2=10.3, p <.001, OR=2.6, CI (95%) =1.4-4.7). More psychotic illness in stranger followers (28.8%) versus ex-intimate followers (8.5%), χ^2=11.4, p=.001, OR=2.6, CI (95%) =1.4-4.7). Psychosis was associated with increased duration of stalking, U=3043, p <.001. "Serial" perpetrators (carrying out more than one episode of stalking) were more likely to have personality disorders, (χ^2=5.56, p=.02, OR=2.4, CI (95%) = 1.2-5.0) 42% of strangers and acquaintances had PD vs. 51% of ex-intimates, a significant difference (χ^2=1.5, p=.22, OR=0.7, CI (95%) =0.4-1.2). 27.3% of stranger/ acquaintances group had comorbid diagnoses of PD and Axis 1 diagnoses vs. 19.7% of ex-intimate group.	Sampling bias – referral sample which may over-represent prevalence of clinical diagnoses, as well as severity of stalking behaviours; thus, findings cannot be generalised to general population. The authors state that a measurement limitation and therefore risk of bias exists in terms of diagnosis of personality disorders, as despite usage of personality assessments they also relied on clinical observation data and cautioning specific personality disorder types may have been inaccurately assigned. Quality Score: 1
McEwan, Daffern, MacKenzie & Ogloff (2016).	N=157, 91% Male. Non-random referral sample from a treatment clinic.	No comparison groups. Definitions of salient stalking aspects as follows: Contact (phone, letters, social media, email/text, unsolicited	DSM-IV-TR; SCID-II; Coding for Factor H7 of the HCR-20 (Presence of Personality Disorder). 64% diagnosed with mental disorder	Presence of psychotic symptoms was unrelated to stalking violence (χ^2=1.7, p=.19); presence of personality disorders unrelated to stalking violence (χ^2=1.7, p=.20). Substance misuse also unrelated to stalking violence (χ^2=2.9, p=.09).	Sampling bias – the most serious cases may have not been represented as they would have been more likely to have been imprisoned rather than referred for treatment in the

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
		materials); approach (spying, accosting, trespassing); Stalking violence defined as contact with intent to coerce or harm either victim or associates of victim, with or without a weapon. χ^2 test; Fisher's exact test; Mann-Whitney *U* test; binary logistic regression.	including personality disorders, depression, and psychosis. 18% diagnosed with problematic personality traits. 27% diagnosed with substance misuse disorder.	Psychosis was a risk factor for persistence, U=2283.5, p<.01. Personality disorder was a risk factor for recurrent stalking perpetration, χ^2=10.34, φ= .25 (moderate effect size). Personality disorder was also part of the final logistic regression model predicting recurrent stalking (β=1.12, SE=.49, p=.02, OR = 3.06, CI (95%) =1.16-8.05).	clinic from which data was collected. Possible measurement bias – retrospective design means only associative relationships can be determined, not true predictive relationships. Quality Score: 0.95
Meloy, Mohandie & Green (2011).	N=143, all female. Sub-sample from Mohandie et al. (2006) dataset (see below).	Compared with males in dataset on clinical factors – also on RECON typology categories and levels of threats and violence. χ^2 test; independent *t*-samples test; one-way ANOVA.	DSM-IV-TR. 18% of sample diagnosed with mood disorders; 15% with thought disorders; 16% with psychosis. In 61% of cases without missing data suicidality was evident. 1 in 6 was psychotic at time of index offence.	33% of sample had substance misuse disorders during index offence (significantly less than males, χ^2=20.810, p<0.001, Φ=0.202). No other analyses on clinical factors were completed.	Selection/sampling bias – non-random sample inhibiting generalisation to stalking perpetrators who have not come into contact with the criminal justice system. Measurement bias – possible nonresponse bias as data collection strategy may have varied between agencies collecting original data, with significant amount of missing data regarding mental health symptoms and diagnoses. Quality Score: 0.9
Meloy, Rivers, Siegel, Gothard,	Stalking perpetrators N=65, 83% Male; mentally	Stalking perpetrators (SP) versus mentally ill offenders (MIO) who did not perpetrate stalking.	DSM-IV (but without structured diagnostic interviews).	SP ex-intimates were more likely to have substance misuse disorders, χ^2 (1) =4.66, p=.03. They were less likely to have schizophrenia diagnosis than the other SP	Measurement bias – though DSM-IV used for diagnosis, possible that additional diagnostic features may have

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
Naimark & Nicolini (2000).	ill offenders N=65, 89.2% Male. Archival, court-referred for forensic psychiatric evaluations.	SP group divided also based on victim type – into ex-intimates (N=37) and strangers/acquaintances (N=20). χ^2 test; z-tests; two-tailed independent samples t-test.	Of SP group, 86% had an Axis I diagnosis – 48% of these had substance misuse disorders. 23% mood disorder (dysthymia or bipolar). 11% Schizophrenia. 6% delusional disorder. 62% of SP group had Personality Disorders – Antisocial (N=6), Borderline (N=2), and N=1 for Narcissistic, Schizoid, Paranoid, Histrionic and Dependent. N=1 with borderline intellectual functioning.	subgroup, χ^2 (1) =4.85, p=.027 or any psychosis (except substance-induced), χ^2 (1) =5.36, p=.02. SP ex-intimates were also significantly more violent than the SP strangers/acquaintances, χ^2 (1) =36.24, p<.001. There were no significant differences between the SP and MIO groups in rate of personality disorders or substance misuse disorders diagnoses.	been missed due to lack of structured diagnostic interview usage. Generalisability bias – forensic sample so findings may not translate to context of community population. Quality Score: 0.83
Mohandie, Meloy, McGowan & Williams (2006).	N=1005, 86% Male. Non-random samples obtained via prosecution and police services, and security departments of private entertainment company,	Study aimed to validate a typology of stalkers, and dataset supported 4 distinct categories of stalking perpetrators divided by relationship to target – ex-intimate; acquaintance; private stranger; public figure. χ^2 test; independent *t*-samples test; one-way ANOVA.	DSM-IV-TR. 46% of sample had mental health diagnoses or suspected symptoms, inclusive of: thought, mood, personality or other disorders. 32% of sample had histories of substance misuse.	Perpetrators without prior relationship to the target (namely, against private strangers and public figures) were more likely to display psychosis symptoms than perpetrators with prior relationship to their targets, χ^2=22.158, p<.001. Perpetrators against public figures were more psychotic than perpetrators against private strangers, χ^2=19.951, p<.001; misused substances more, χ^2=14.655, p<.001; and had more mental health diagnoses, F=6.148, p=.01. Perpetrators against ex-intimates showed more substance misuse than perpetrators	Reporting bias – authors acknowledged non-reporting of statistical results over p=.01. Selection/sampling bias – non-random samples inhibiting generalisation to stalking perpetrators who have not come into contact with the criminal justice system. Measurement bias – the authors stated observation and nonresponse bias are present as their data collection strategy

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
	originating in North America.			against acquaintances (χ^2=6.864, p<.01) and perpetrators against private strangers (χ^2=14.543, p<.001). Subjects with psychosis were less violent than those without mental health diagnoses, or any other mental health diagnosis – F=10.033, p<.001.	may have been different to the agencies which collected the original data, and there was a significant amount of missing data with regards to mental health symptoms and diagnoses. Quality Score: 0.86
Mullen, Pathé, Purcell & Stuart (1999).	N=145, 79% Males. Non-random referral sample from a treatment clinic.	No comparison groups present. χ^2 test; log-linear modelling with post-hoc analysis via log-linear parameters. One-way ANOVA and Tukey's honest significant difference for post-hoc analysis was also used across continuous variables. Effects of specific categories were expressed as *z*-scores.	DSM-IV. 40.6% of sample were diagnosed with psychotic symptoms (including schizophrenia; bipolar disorder; and delusional disorders). 51% of the sample were diagnosed with personality disorders, majority in Cluster B category. 25% were diagnosed with substance misuse disorder.	Letter writing by perpetrators was predicted by diagnosis of delusional disorders, χ^2=11.14, p<.02. Presence of personality disorders related to higher number of stalking strategies used by perpetrators, F=3.04, p< .02. These perpetrators were also twice as likely as all other perpetrators to physically follow their targets, z=3.30, p<.001. Substance misuse disorders predicted property damage by perpetrators, χ^2=7.52, p<.005. Non-psychotic perpetrators were more likely than psychotic perpetrators to assault targets, χ^2=4.42, p<.05.	Sampling bias – data collected from a clinical context suggesting cases observed may have presented more severe mental health difficulties. Quality Score: 0.77
Nijdam-Jones, Rosenfeld, Gerbrandij & Quick (2018).	N=137, 94.2% Male. Referral to community treatment programme.	No pre-specified comparison group but identified different diagnostic groups through data collection (Psychotic, Mood/Anxiety, Substance Use,	DSM-IV – using Structured Clinical Interview for DSM-IV (SCID) for Axis I and Axis II. Psychopathy Checklist Revised – Screening Version (PCL:SV).	Psychotic group stalked friends/acquaintances more than non-psychotic groups - χ^2 (2, 133) = 11.77, p=.003, Φ=.30; non-psychotic groups were more likely to target ex-intimates. Psychotic group was also negatively associated with stalking ex-intimates, β= -1.71, χ^2 (1) =7.96, p=.005; and used stalking to attempt	Measurement bias – very extensive but did not include neuro-developmental conditions. Possible issues with high levels of comorbidity in this sample as a confounder. Quality Score: 0.95

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
		Personality Disorder, No diagnosis). Independent t-tests; χ^2 test; multiple linear and logistic regressions.		initiating a relationship, $\beta=1.47$, χ^2 (1) =4.39, p=.036. No significant difference between Borderline Personality Disorder category and no-diagnosis group on stalking characteristics (e.g. victim type), nor between Paranoid Personality Disorder category and no-diagnosis group. Logistic regression models assessed if psychotic disorder predicted stalking characteristics when accounting for all comparison groups. Whilst the psychotic group showed significant model contributions, the overall models indicated that diagnostic group status did not differentiate who stalked ex-intimates - χ^2 (4) =8.94, p=.06, Nagelkirk's R^2 = .10; who stalked friends/acquaintances - χ^2 (4) =7.37, p=.12, Nagelkirk's R^2 = .11; or relationship initiation as motive, - χ^2 (4) =7.12, p=.13, Nagelkirk's R^2 = .11. Substance misuse group were more likely to have prior stalking convictions than any other group, - χ^2 (1, 133) =5.77, p=.016, Φ=.21.	
Norris, Matthew & Palarea (2011).	N=120, Male sample. Self- or court-referred to intimate partner violence (IPV)	Sample divided into non-stalkers (NS) subclinical stalkers (SS), and clinical stalkers (CS) – reflected degree of stalking in IPV.	MCMI-III for personality disorder features. Beck Depression Inventory-II.	No effects reported for Beck Depression Inventory-II. CS (Mean=61.658, SD=21.271) had more antisocial traits than NS (M= 49.514, SD=21.444) and SS (M=46.738, SD=21.791), $p<0.05$.	Did not identify direct link between persistent stalking perpetration patterns and clinical factors in IPV – merely that one-off incidents of stalking could occur in IPV.

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
	treatment programmes.	MANOVA analysis.		CS (M=55.105, SD=23.998) had more sadistic traits than NS (M=39.00, SD=26.079) and SS (M=39.310, SD=22.752), $p<0.05$. CS (M=67.447, SD=24.353) had more alcohol dependence than NS (M=50.086, SD=23.122) and SS (M=48.143, SD=24.361), $p<0.05$. CS (M=58.395, SD=20.051) had more drug dependence than NS (M=46.429, SD=19.719) and SS (M=46.762, SD=21.534), $p<0.05$.	Sample medium sized and not diverse although community based. Possible issues of self-report bias. Measure of stalking behaviours not commonly used. Quality score: 0.81
Reavis, Allen & Melloy (2008).	N=78, 79.5% Male. Court-referred for outpatient treatment at forensic clinic.	Grouped according to relationship with victim: 79.5% stalked an ex-intimate; 11.5% stalked an acquaintance; 9% stalked a stranger. One-way ANOVA.	PCL-R and PCL-SV.	15% of total sample were classified as psychopaths. 15% (N=9) of those stalking an ex-intimate were classified as psychopaths; 43% (N=3) of those stalking a stranger were classified as psychopaths. One-way ANOVA did not find significant differences between rates of psychopathy in the different groups.	Analysis issues – authors note biases associated with effect size measure η^2, and lack of standard effect size guidelines; and authors also noted that homogeneity of variance assumption was potentially untenable as the sample sizes were different between groups.
Rosenfeld (2003).	N=189, 77.7% Male. Non-random medico-legal referral.	Perpetrators were divided into groups according to diagnosis – personality disorders; psychotic and delusional disorders; and a specific category for interactions between personality disorders, psychotic disorders, and histories of substance misuse.	DSM-III-R; DSM-IV. 36.5% of sample diagnosed with personality disorders, 52.1% of which fell into Cluster B category. 32.3% of sample were diagnosed with psychotic disorders.	Personality disorders of any kind predicted re-offending, $\chi^2=7.81$, $p=.005$; Cluster B personality disorders especially predicted re-offending, $\chi^2=13.03$, $p<.001$. Delusional perpetrators were significantly less likely to reoffend, $\chi^2=5.18$, $p=.02$. Substance misuse history on its own was not associated with re-offending, $\chi^2=2.03$, $p=.15$. In survival analysis measuring time until first instance of re-offending, three factors were influential on the survival curve	Sampling bias – non-random sample collected from forensic agencies referring perpetrators for treatment, unlikely to represent general population. In addition, the more severe cases of psychotic perpetrators who were referred had to be excluded from the recidivism analysis as they were not fit to be released to the community.

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
		χ^2 test; one-sample t-test; Cox Proportional Hazards models, significance tested via log-rank and log-likelihood tests (to assess rate of re-offending).	11.6% of sample were diagnosed with mood disorders (including bipolar affective disorder, depression, and dysthymia).	both in log-rank and log-likelihood tests: presence of any personality disorder (Log Rank χ^2=6.23, p=.01; -2 Log Likelihood=7.85, p=.005); presence of cluster B personality disorders (Log Rank χ^2=16.73, p<.001; -2 Log Likelihood=24.94, p<.001); and the interaction of personality disorders with substance misuse (Log Rank χ^2=10.37, p=.02; -2 Log Likelihood=14.36, p=.003). Authors concluded presence of personality disorders and substance misuse histories contributed to a significantly earlier instant of re-offending compared with other perpetrators in the sample.	Measurement bias – author states sample size was too small to conduct more complex analyses; possible this may have revealed different relationships in the dataset. Quality Score: 0.86
Storey, Hart, Meloy & Reavis (2008).	N=61, Male. Court referral for treatment to outpatient forensic clinic.	Relationship between stalking perpetrator and victim – close (ex-intimates and family) moderate (e.g. professional or social) and low (strangers, etc.) χ^2 test; Pearson's *r* for bivariate correlations; exploratory canonical correlations analysis.	PCL-SV; Stalking Assessment and Management guidelines (SAM) used to identify stalking behaviours, risk factors, and victim vulnerabilities. 1.67% of sample were classified as psychopathic.	Psychopathy was not prevalent in the sample. There were no significant differences between psychopathy levels between relationship-type groups. However, correlations revealed positive relationship between total PCL-SV score and the 3 SAM domains. Canonical correlations specifically showed PCL-SV accounted for 10% of variance in Nature of Stalking domain, $\chi^2(40)$ =56.74, p<.05; 8% of the variance in perpetrator risk factors, χ^2 (40) =63.57, p<.01; and 13% of variance in victim vulnerability domain, $\chi^2(36)$ =52.12, p<.04. Facet 2 of the PCL-SV (Affective) had the strongest association with all SAM domains.	Measurement Bias – sample small and not diverse. Possible that confounding variables were not accounted for. Quality Score: 0.81

Study	Sample and recruitment method	Comparison groups (if present) and analysis method	Assessment and classification of Clinical Factors	Relationship of clinical factors to stalking behaviours perpetration	Risk and Type of Bias (if present); quality assessment score
Thompson, Dennison & Stewart (2013).	N=703, Female=73.1% Convenience sample – university and community. Authors note not all cases would meet criteria for conviction but obviously perpetrated stalking behaviours.	Comparison groups of none/moderate/severe violence in stalking perpetration (moderate N=184, severe N=109). χ^2 test; logistic regressions (for predictive model of moderate vs. severe violence).	PDQ-4 (mapped on criteria of DSM-IV): Borderline and Narcissistic subscales only. Alcohol and drug use during index offence – coded binary as present/absent.	Borderline personality traits were associated with severe stalking violence only, χ^2 (2, 703) =18.22, p<.001, Cramer's V=.16. Narcissistic personality traits were associated with severe stalking violence only, χ^2 (2, 703) =10.36, p=.006, Cramer's V=.12. Alcohol use associated only with severe stalking violence, χ^2 (2, 703) = 10.54, p=.005, Cramer's V=.12. Drug use associated only with severe stalking violence, χ^2 (2, 703) = 32.09, p<.001, Cramer's V =.21. In the final model for predicting severe stalking violence, only drug use was significant, B(SE) = 0.70 (0.33), Wald test =4.51, p=.05. However, when "need for control" (a theorised psychological variable for prediction of severe stalking violence) was added to the overall model, drug use became non-significant.	Measurement bias – only two subscales of the full PDQ-4 tool were used, potentially missing out other personality disorders or other mental health difficulties (although these were not theorised to be significantly contributory in the research question). Extent of alcohol and drug use was not measured precisely and therefore possible different relationships exist between various levels of substance use and moderate versus severe stalking violence. Analysis – no interactional effects measured between variables. Sample bias – authors suggest despite large sample size it was unlikely to capture the full range of stalking perpetrators, especially as a community sample. Theoretical limitation – model upon which research is based draws on empirical studies performed on male-heavy samples; it is possible female-specific risk factors exist which are not captured in this study. Quality Score: 0.9

Synthesis

Study Characteristics

It is important to note that these studies all originate from Australia, North-American, and British areas. It is therefore possible that different findings would be collated from studies in other areas of the world. It is also possible that the studies being conducted in English would exclude members of cultural minorities who do not speak English, and their experiences of stalking perpetration would therefore not be included in this review. It is also important to note the cultural differences between these geographical areas themselves – the attitudes towards stalking perpetration by the public, criminal justice system, and forensic healthcare systems may be different; and finally, the definitions themselves of stalking perpetration may change between legal systems across countries. With regards to the last point, the studies included in this review did largely use the same wording to describe their definition of stalking, suggesting that while there may be minor variations of what stalking perpetration includes across studies, they are largely consistent in the academic literature included here.

Presence of Mental Health Factors and Relationship to Stalking Behaviours

The most common mental health diagnoses were of psychotic disorders, followed by mood disorders such as bipolar disorder or major depressive disorder. Studies showed association of psychosis to communicating rather than directly approaching a target (Mullen et al, 1999; McEwan et al, 2012); reduced likelihood of violence (James & Farnham, 2003; McEwan et al, 2016; Mullen et al, 1999); prolonged duration of stalking episodes (McEwan et al, 2013; McEwan et al, 2016); and the target being more likely to be an individual to whom the perpetrator was a stranger or acquaintance (Kienlen et al, 1997; Meloy et al, 2000; McEwan et al, 2012; McEwan et al, 2013; Mohandie et al, 2006; and Nijdam-Jones et al, 2018). Importantly, whilst the majority of these studies were from forensic (court-referrals for evaluation or case information from forensic agencies) or from medico-legal (specialised or forensic treatment clinics) contexts, Nijdam-Jones et al's (2018) study, which was carried out in community setting, also made some of these findings (though the overall final model was not significant). This suggests that

forensic contexts captured more serious cases where the mental disorder was perhaps more evident and may have led to more severe judicial consequences. Therefore, additional community-based research would aid identifying whether the relationship between psychotic (and possibly other mental health) disorders and stalking perpetration is stronger in forensic contexts, so as to avoid generalisability bias which currently exists as there are fewer community-based studies.

It is also important to note that whilst the DSM criteria (editions IV, IV-TR and 5) were used in the majority of the studies to make a diagnosis, in some studies it is unclear whether this was supported by other assessment tools or a structured interview, as not all the articles included clarified how the DSM criteria was applied. Whilst unlikely that any cases were wrongly identified as all diagnosticians were identified in the studies as trained psychologists or psychiatrists and in many cases interrater reliability was measured, it is still possible that some disparity exists in diagnostic features between studies.

Personality Disorders and Relationship to Stalking Behaviours

Personality disorders assessed in the studies were largely of the DSM Cluster B variety – Antisocial, Narcissistic, and Borderline. Some studies also included Cluster A, namely Paranoid and Schizotypal personality disorders. No Cluster C disorders were identified in any study.

The presence of personality disorders was associated with usage of more varied stalking strategies (e.g. direct communication, direct approach, and online stalking perpetration – Cavezza & McEwan, 2014; Mullen et al, 1999); faster re-offending (Rosenfeld, 2003); repeated episodes of stalking perpetration against the same target (McEwan et al, 2008; McEwan et al, 2013; McEwan et al, 2016); higher likelihood of violence or assault towards the target (Thompson et al, 2013); and the target being an individual with whom the perpetrator had a relationship with in the past, usually an intimate relationship (Kienlen et al, 1997; Norris et al, 2011). Stalking perpetrators were also found to have comparable rates of personality disorder diagnoses, especially Antisocial personality disorder, as non-stalking offenders (Meloy et al, 2000). Interestingly, Johnson et al (2016) found Narcissistic and Borderline personality traits in community samples were not associated with stalking

persistence; this is in line with research indicating that more persistent stalking perpetrators are actually more likely to be suffering from a psychotic disorder. Finally, Nijdam-Jones et al (2018) identified that personality disorder diagnosis did not differentiate predictions of what victim type (e.g., stranger, ex-intimate) a perpetrator was likely to stalk. This was found in a community setting; however, studies examining this in forensic contexts (such as Kienlen et al, 1997) did not differentiate between diagnoses within non-psychotic groups in the sample. It is possible that personality disorders do not indicate clearly whether an ex-intimate is more likely to be followed both in forensic and community contexts, although the studies here do indicate they play a significant part in stalking perpetration. In particular, personality disorders may be seen more often in forensic samples, as again these are more likely to capture more serious cases with more judicial consequences.

Psychopathy at present is not included in the DSM-5 and is considered to be distinct from Antisocial personality disorder (Ogloff, 2006). However, in the interest of inclusion of recognised diagnoses outside standardised manuals such as the DSM, two studies meeting criteria for inclusion are also reported. Both identify that psychopathy, as measured by the Psychopathy Checklist – Screening Version, did not appear to correlate or predict stalking perpetration nor consistently correlate with a specific type of victim, though more evidence (Reavis et al, 2008) indicates individuals with psychopathic traits may target strangers over ex-intimates or close relations.

Substance Misuse Disorders and Relationship to Stalking Behaviours

Substance misuse was frequently found in the studies. Its presence predicted violence and property damage (Mullen et al, 1999; Eke et al, 2011; Thompson et al, 2013) although the results on this criterion varied; James and Farnham (2003) and McEwan et al (2016) found there was no relationship between substance misuse and violence at all. Rosenfeld (2003) found that substance misuse was related to violence only when comorbid with personality disorders. In addition, substance misuse was related to stalking against ex-intimate partners (Meloy et al, 2000; Mohandie et al, 2006; Norris et al, 2011) though this seems relatively restricted to forensic context (Norris et al's study, however, relied on referrals to outpatient treatment programmes, suggesting it may potentially reflect a community context). Interestingly, Meloy et al

(2011) found substance misuse disorders were present in a third of cases during the index offence, suggesting it was a potential trigger or disinhibiting risk factor; Thompson et al's (2013) study seemed to confirm this as a trigger or contextual risk factor in their model. Nijdam-Jones et al (2018) further identified that individuals with substance misuse disorder diagnoses had the most historical stalking offences in the sample, suggesting a potential link. The most robust finding relating to this clinical factor is the relationship between substance misuse and targeting of ex-intimate partners – as this was found both in forensic and community samples.

However, measurement of this variable appears to vary between studies. Some studies used the DSM to identify substance misuse disorders, whereas others merely asked participants if they had used alcohol or drugs and coded a binary result. It is possible therefore that the true extent of substance misuse and how the degree of it in different perpetrators may contribute to stalking perpetration has not been fully assessed, and therefore should be studied further.

Discussion

This systematic review exploring the presence of clinical factors in relation to stalking perpetration found via qualitative synthesis that three clinical factors were largely studied and found to be associated with stalking perpetration: psychotic disorders; personality disorders; and substance misuse disorders. Specifically, psychotic disorders were largely related to targeting strangers or acquaintances and less violence towards the target; personality disorders were related to recurring stalking episodes, increased violence in stalking, and targeting (to some extent) of particularly ex-intimate victims. Substance misuse disorders were also related to violence rates in stalking and individuals suffering from these were also more likely to target ex-intimate victims.

Psychotic disorders are also documented in forensic and medico-legal settings. Kooyman et al (2012) found that whilst offenders with psychotic disorders offended more prior to onset of their illness, they were largely non-violent offenders. Douglas et al (2009) found a moderate relationship between psychosis and violence, although the studies in their meta-analysis showed a

great degree of variation in this relationship; it is possible that this may be due to comorbidity with other diagnoses, especially personality disorders. It may be possible to surmise that violence, whilst present in offender with psychotic disorders, may not be as prevalent as in offenders with other types of mental health difficulties. It is somewhat reflective of the results presented here that less violence is noted in stalking perpetrators with psychotic disorders. In terms of specific aspects of psychotic disorders explaining the findings here, it is possible that the degree of thought disorder in psychotic disorders may affect the choice of specific targets for stalking perpetrators, namely tending more towards targets without a specific or lesser prior relationship to the perpetrator, due to the person stalking confusing the exact nature of this relationship.

Personality disorders, especially those belonging to DSM-5's Cluster B have been well-documented in the criminal justice system (Fazel & Danesh, 2002; Esbec & Echeburùa, 2010; Yu et al, 2012) and especially in the context of violent behaviours. Antisocial Personality Disorder (ASPD) and Borderline Personality Disorder (BPD) are the most commonly diagnosed, both within men and women; Narcissistic Personality Disorder (NPD) is closely behind these. Common to ASPD and BPD are impulsivity and poor emotional regulation, as well as comorbidities with substance misuse. In BPD, individuals also tend to form unstable and intense relationships with others. An additional aspect, particularly in NPD, is the sensitivity to rejection and emotional reactivity, which along with paranoid traits may increase likelihood of perpetrating violence (Esbec & Echeburùa, 2010). These specific aspects of the Cluster B personality disorders normally seen in forensic settings may help formulate a better understanding of stalking perpetrators with personality disorders.

Though mood disorders and learning disabilities are also mentioned, they were not explored in the context of their relationships to stalking perpetration in large samples. Some case studies exist which review delusional disorder and bipolar disorder (Silva et al, 2000; Catanesi et al, 2013) but they did not meet criteria for inclusion. It is possible that as most of the studies were from forensic contexts, where the cases assessed are potentially more severe in presentation, mood and developmental disorders were not as present or exerted as much influence in more severe stalking behaviours. The

studies using community samples in this review did not in fact assess for neurodevelopmental disorders, suggesting that the relationship between neurodevelopmental disorders and stalking perpetration is putative at best in both legal and community settings, given the few studies in existence. Some studies in the field of ASD have found some evidence of stalking perpetration which did not reach legal settings (Stokes et al, 2007; Haskins & Silva, 2006). The behaviour may occur, but it is not legally recorded.

Some of the studies in this review bear their own limitations, which may impact the results found. For example, the earlier studies (e.g., Kienlen et al, 1997; Meloy et al, 2000; James & Farham, 2003) have relatively small sample sizes, as they are based on referrals to forensic clinics and archival data. Firstly, the data from these earlier studies could not have been generalised until further data was collected; secondly, the samples were not able to be fully randomised. However, given these studies were examining specific combinations of factors – psychiatric disorders and stalking perpetration – it is likely that given the available data at the time it would be possible to recruit a randomised sample. It would be beneficial to repeat these studies and their objectives contemporarily and see whether the findings change, and whether recruited samples are larger and more random.

As discussed earlier, the country of origin – Australia, UK, and USA – may have a bearing on the definitions of stalking perpetration used to identify participants. However, the definitions were fairly consistent within-contexts (i.e., within the forensic and within community contexts). Between-contexts, however, the definition of what constituted stalking perpetration can be different – as forensic contexts are more likely to use legal definitions that pertain to violence or induction of fear (see Lyndon et al, 2012) but community contexts will also describe behaviours that are considered unwanted but do not necessarily induce fear in the victim.

A limitation of this review is measurement bias within some of the studies in this review. Many of the authors noted that due to sample sizes, particular statistical analyses, missing data in large samples, and some difficulties in assigning specific diagnoses when using additional clinical observation methods may have affected the results. However, the overall quality of each

separate study and the methods in which the authors attempted to compensate for each drawback in their studies suggests the overall results of this systematic review are robust.

In addition to measurement, samples are largely drawn from forensic settings, such as Police and security databases or specialised treatment clinics. However, it appears that studies have largely been conducted in forensic settings as this is where stalking behaviours was initially most observed and criminalised; as the research into stalking perpetration and associated offending behaviours evolved, focus started to shift into the community context, which allows some comparisons about clinical factors' prevalence across settings to be drawn.

A final limitation is the relative imbalance in genders across the samples. Most samples were either males only or mixed with over 70% of the sample male. Only five studies assessed female samples only or had a female-majority sample. This suggests that currently most of the findings regarding psychiatric or personality disorders may be based on prevalence rates largely in males. However, there were no significant differences identified in the range of clinical factors in the studies examining female or mostly female samples. Whilst further research is required to explore whether this finding remains the case or whether an artefact of current literature availability, it is possible at present to cautiously infer clinical disorders are not largely different across genders when reviewed in the context of stalking. However, it is important to note that this does not extend to differences between genders in terms of stalking motivations or characteristics.

This review summarises the role of psychotic and substance misuse disorders and personality traits and disorders in the perpetration of stalking behaviours. As one of the aims of this thesis was to explore the relationship of personality traits to stalking perpetration, this review reinforces the literature examined in chapter 1, suggesting that cluster B personalities were more likely to be found in relation to stalking perpetration. It may be tentatively suggested that any personality trait profiles found using the HEXACO (see chapter 4) may reflect personality traits associated with cluster B personality disorders.

This review, importantly, did not identify any studies suitable for inclusion on ASD and stalking perpetration, especially as there are so few

(Mercer & Allely, 2020). This suggests more empirical research on the role of ASD and neurodevelopmental disorders in stalking perpetration is required, and particularly in the community context as it is noted that stalking perpetration in relation to ASD may not meet legal threshold to be classified as criminal. This may be examined within communities of adults with ASD first, perhaps through online-mediated research (see chapter 3). It may also be examined through case-studies in juvenile samples of individuals with ASD and other neurodevelopmental disorders, as this would clarify whether stalking perpetration which does not meet legal threshold to be classified as criminal is more likely to occur in younger individuals, who may then require preventative support.

Substance misuse, although not explored in the empirical chapters of this thesis, is no less important to examine in terms of contribution to stalking perpetration in future research. This could be done, for example, via longitudinal studies looking at recidivism risk, and perhaps the relationship to personality traits. This type of research would further increase our understanding of contributing factors to stalking perpetration, and where intervention programmes may be best applied.

Chapter 3: Online Data Collection for Forensic Psychology Research – A Methodological Critique

Abstract

Aims: Data collection using internet-mediated methods presents a unique opportunity for wider reach in research studies, particularly in forensic research. However, this methodology needs to be examined for its appropriateness in use of forensic psychology research in community samples.
Methods: the review examined issues of data validity in internet-mediated research; recruitment; topic sensitivity; social desirability; and ethical issues.
Findings: the validity of internet-mediated research is similar to that of pen and paper methods but depends on additional aspects such as survey display and participant engagement and which populations the data will be generalised to. Recruitment is easier, but issues surrounding hidden populations and researcher legitimacy must be considered. Internet-mediated research is better for eliciting responses on sensitive topics and may even lower social desirability. However, ethical concerns such as privacy and monitoring participants in case of distress may be slightly more difficult, as well as consideration for reporting safeguarding information.
Conclusions: Internet-mediated methodology is well-placed to support research in forensic psychology where sensitive and difficult topics are concerned, but it is important to ensure that participants are carefully approached and supported after studies on difficult topics.

Introduction

The quality of any empirical study relies on several aspects (Kmet et al, 2004): a logical hypothesis, effective data collection methodology, an appropriate analysis, and logical conclusions. Arguably, data collection is the lengthiest process when conducting a study, and it needs to be carried out with care and precision whilst gathering as much usable data as possible. One way to do this is via the Internet; academics realised the connectivity of the Internet was a powerful resource for communications and data gathering, and Internet-mediated research began to be used in the 1990s (see Epstein & Klinkenberg, 2001).

The technology surrounding Internet use has developed considerably over the past 20 years, and with it the guidelines and modifications to dissemination and design of Internet-mediated surveys and questionnaires. Earlier studies from the first decade of the 21st century show there was initially a reliance on dissemination via email and mailing lists, and missing data was a common problem due to lack of tools to ensure answers were obtained (e.g., Riva et al, 2003; Ahern, 2005; Lefever et al, 2007; Cantrell & Lupinacci, 2007). Later studies began to use repositories or websites designed specifically to enable respondents to answer surveys and used social media or specific academic hubs online to advertise the research (e.g., Dodou & de Winter, 2014; Vésteinsdóttir et al, 2018). Usage of the Internet for data collection presents new ethical dilemmas, policies, and laws for researchers, law enforcers, medical professionals – and users (see Recupero & Felthous, 2018).

The use of the Internet in forensic psychology research in particular is important to consider. As the Internet is so readily accessible to millions of people, it is a good method of data collection as its reach is far and wide. The use of a computer – or a portable device – can ensure that individuals can participate at their own pace and comfort, and perhaps with an increased sense of privacy. Individuals with Autistic Spectrum Disorders (ASD) in particular, as were recruited for the empirical studies concerning ASD and related conditions in chapters 4 and 5, may benefit from participating in Internet-mediated research compared to offline research, as they tend to find online communications easier to use (van der Aa et al, 2016; Gillespie-Lynch et al, 2014; Benford & Standen 2009).

However, as little research exists on conducting Internet-mediated research with the ASD community in forensic contexts, the focus of this review will be on the utility of the Internet as a data collection tool within forensic psychology research in general. It focusses specifically on factors affecting validity and reliability of Internet-mediated surveys and questionnaires (IM-SQ), namely the internal validity and response rates of IM-SQ studies; recruitment for IM-SQ studies; topic sensitivity; social desirability, an issue affecting survey-mediated research in general; and finally, ethical questions about the usage of IM-SQ in forensic psychology research.

Validity of IM-SQ data

In IM-SQ studies, the validity of the methodology is dependent on that of the psychometric tool used in the study. Riva et al (2003) found that the psychometric properties of pencil-and-paper surveys are retained in IM-SQ. However, it is possible that there are inherent differences between paper-and-pencil and IM-SQ-mediated psychometric tools. To ensure validity remains the same or higher as that of paper-and-pencil psychometric tools, steps should be taken to account for those possible differences. One such difference may be the display of the survey (fonts, ease of answering multiple-choice and open-ended items, whether the participant's device supports the application in which the survey is administered, length of the survey, etc.; Ponto, 2015). Another may be the format in which participants respond to the survey – Coutts and Jann (2011) found that a particular method of 'forced-answering' (where participants must choose an answer in an IM-SQ in order to progress to the next item) worked better than another, suggesting that researchers using IM-SQ should be aware of the nuances of different response formats. Vésteinsdóttir et al (2018) suggested a method to increase the honesty of participants' responses based on designing the questionnaire in the study differently, by including instructions for honest responding throughout the body of the IM-SQ. Respondents in the experimental group, who received the instructions, gave significantly more socially undesirable responses on all sensitive questions included than the control group. The Marlowe-Crowne Social Desirability scores were not significantly different between the control

and experimental groups, suggesting that differences in responses are not attributable to differences in socially desirable response styles.

Wiersma (2013), however, cautions the usage of IM-SQ: while mailed surveys have a response rate of approximately 30%, IM-SQ response rates can fall below this. Fan and Yan (2010) systematically reviewed multiple factors affecting response rates in IM-SQ throughout the research process – from recruitment, to participation, to completion of the study – and suggested piloting the IM-SQ on a smaller sample and making changes as necessary; linking participants more directly to the survey, rather than engaging in a lengthy process of sending invitations and reminders; and making the survey completion easy for inexperienced users who may otherwise choose not to complete the study. Roster et al (2017) also suggest that participants from databases (where participants are invited to respond to studies on a such as Research-gate, Craigslist, Call for Participants and Survey Circle) are more likely to respond to IM-SQ on sensitive topics if they are provided with incentives.

Another aspect of validity is that of external validity – how generalisable the data gathered is to the general population. This depends on the sample in which the data is initially gathered, and its relationship to the general population. In forensic psychology research, it is less likely that studies pertaining to offending or delinquent behaviours are generalisable to the general population, as these behaviours are in theory less prevalent than non-offending and non-delinquent behaviours. Therefore, a forensic psychology study utilising a specific sample in which a specific behaviour occurs needs to be generalisable only to other samples where the behaviour may also occur (unless the study is a prevalence study). It is likely, however, that not all individuals from a particular population choose to participate in a given study; for example, Porter and Whitcomb (2005) found that for IM-SQ studies in student populations, female students with an "investigative" personality type were more likely to respond to surveys than other individuals belonging to this population. Keusch (2015) further reviewed factors affecting participation in IM-SQ, and noted that interest in the topic, cultural association (individualistic or collectivistic), and previous and consistent participation in IM-SQ studies are all important determining whether an individual will participate or not. It is likely that these factors are relevant to all populations studied via IM-SQ.

Additional factors which may be specific to forensic populations are possible mistrust of professionals, or cynicism towards study participation or engagement.

Recruitment

Many IM-SQ studies use participant databases of individuals who have previously consented to participate in research, regardless of its topic (Roster et al, 2017). This is an accessible and cost-effective method of recruiting participants, as the invitation to complete the study can reach a larger audience via the Internet (Lefever et al, 2007). However, it should also be considered whether this reaches the criterion groups researchers wish to study. Shaghaghi et al (2011) suggested methods of approaching hidden populations – these which are difficult to identify outside the Internet due to a lack of visible identifying features – and stated that most importantly, successful recruitment of participants from hidden populations depends on the researchers' understanding and respect of the groups. As such, forums, 'chat-rooms', and social media are useful tools of recruitment (Baltar & Brunet, 2012); more relevant to forensic psychology research, they are effective recruitment grounds for hidden populations, such as users of illicit substances (Temple & Brown, 2012) and users of child pornography in the community (Ray et al, 2010). Lieberman (2008) also found that the validity of the results obtained via IM-SQ studies was not affected by using Internet-recruited anonymous samples; moreover, as the study was conducted on a hidden population of individuals with excessive alcohol consumption difficulties, it is possible to generalise this conclusion to medico-legal psychological research.

The Internet as a study-dissemination tool is not limited to recruitment from databases and social media. Sutherland et al (2013) found that with respect to participation in studies on violence, invitations to participate are more successful if the participants are able to see who is responsible for the research; emails from the researcher and their academic institute and government research sponsors were more likely to elicit participation than third party advertisers, such as those one might receive when belonging to a participation database. It is therefore advisable that researchers wishing to use emails, forums, and social media for recruitment always explain their

involvement in the study to potential participants, or when asking group administrators to post a message to Internet-based groups on their behalf. The British Psychological Society guidelines on Internet-Mediated Research (2017) indicate that emails should be used cautiously and be secured, as improper use may lead to breach of confidentiality and of participant anonymity.

Topic Sensitivity

Topic sensitivity refers to topics which can have serious consequences for the participants (Sieber & Stanley, 1988) or questions which can frighten participants regarding the repercussions of disclosures, or even trigger issues of social desirability (Tourangeau & Yan, 2007). Research in this field is particularly relevant in its implications for research in forensic psychology, where respondents may be asked about incidents where they were victimised or committed illicit behaviours. Such research is useful for identifying prevalence rates of specific illicit behaviour, the causes of different behaviours, and the impact of these on participants and those around them; and can have implications for prevention and intervention pathways development. As such, it is vital to receive as valid and as reliable data as possible.

Research using IM-SQ to study sensitive topics indicates IM-SQ methods are preferable to using face-to-face interviews or paper-and-pencil methods. Kays et al (2012) found that IM-SQ including sensitive questions yielded more responses than the same surveys administered via paper-and-pencil. However, the most sensitive items were still left unanswered in the surveys, in both online and paper-and-pencil surveys. Roster et al (2014) found that use of the 'forced-answering' method did not increase or decrease the survey completion rate in a high-sensitivity survey condition, but giving respondents the choice to not answer a question significantly decreased survey completion rate in a high-sensitivity survey condition; this effect was valid cross-culturally (in the U.S. and Hong-Kong). Kreuter et al (2008) showed that using IM-SQ methods also significantly increased the amount of sensitive information participants were willing to divulge. Kleck and Roberts (2012) found that IM-SQ were particularly helpful in supporting participants to divulge sensitive, socially undesirable, and illicit behaviours. Finally, Gnambs

and Kaspar's (2015) meta-analysis indicated that IM-SQ studies elicited significantly more reports of socially undesirable and sensitive behaviours. Roster et al (2014) suggest that in settings where privacy and confidentiality are assured, participants are more likely to disclose sensitive information; it is possible, as Joinson (1999) suggests, that this is due to the participant not facing another person for the interviewing process, but rather a machine. Tourangeau and Yan (2007) support this assertion with their finding that self-reported illicit substance-use was higher electronically than with interviewers present, and Gnambs and Kaspar (2015) further discuss that the setting in which participants self-disclose or complete a study, namely where other participants are also present, can decrease reporting of sensitive behaviours (as a possible result of social desirability).

It appears, then, that IM-SQ are uniquely positioned in research methodologies to collect sensitive data. This is particularly useful provided that respondents are motivated and willing to participate in the study.

Social Desirability

Callegaro (2008) defines this construct as a participant's tendency to respond to researchers in a manner portraying the participant in a positive way. Participants therefore may end up overreporting socially desirable attitudes and behaviours and underreporting undesirable attitudes and behaviours. Tools such as the Marlowe-Crowne Social Desirability Scale (1960) and the Paulhus Deception Scales (1998) were especially developed to assess this phenomenon in research participants and have been studied in fields of psychology such as personality research (Graziano & Tobin, 2002; Bäckström et al, 2009; and Ellingson et al, 2001) where it has been debated whether social desirability is a response style to questionnaires, or whether it is a more stable personality trait. Social desirability can be a difficult obstacle when seeking to record the most honest responses possible from participants; it has in fact been one of the longest-standing issues in survey-based research (Paulhus, 1991).

In IM-SQ studies, there is evidence that social desirability is not hugely different from its presentation in paper-and-pencil studies. Dodou and de Winter (2014) found that mode of administration (paper-and-pencil versus

IM-SQ) did not affect the levels of socially desirable responding noted in data collection; IM-SQ methods were just as prone to socially desirable responding as paper-and-pencil. Gnambs and Kaspar (2017) replicated this finding, suggesting that in terms of social desirability IM-SQ studies had no advantage over other means of data collection. Krumpal (2011) discusses the possible effects of social desirability on IM-SQ, stating that different methodologies in IM-SQ research may help put participants more at ease. Most importantly, if non-response is noted in relation to the key variables measured in a study, it is best to redesign the method of data gathering as otherwise the data sought may be harder to acquire.

Social desirability has obvious implications for forensic psychology research. Andrews and Meyer (2003) reported in a sample of offenders, use of the Marlowe-Crowne Social Desirability Scale indicated significantly higher levels of socially desirable responding compared to community samples. Crowne (1991), however, also discusses that higher levels of socially desirable responding can indicate lower self-esteem, which Garofalo et al (2015) find in violent offenders relative to community participants.

Tan and Grace (2008) reviewed social desirability in offenders and found higher levels of socially desirable responses actually predicted *lower* rates of reoffending. Otter and Egan (2007) suggest that self-deception helps protect against antisocial thinking styles; it is possible offenders who may have a more socially desirable response style with regards to questions on antisocial and delinquent behaviours may do so in an attempt to reduce future offending. This may reflect social desirability as a stable personality trait, rather than a response style.

Socially desirable responding remains a wider issue in survey- and interview-based research methodology. Social desirability may affect forensic psychology research in the general population (particularly prevalence studies) in several ways: participants may be more willing to report in socially undesirable behaviours in IM-SQ studies due to the effects of privacy and anonymity, and thus a valid prevalence rate of specific antisocial behaviours can be recorded. It is also possible that a sampling bias may be in effect, whereby individuals who are more likely to respond to IM-SQ report antisocial behaviours but less so than the wider population from which they were recruited, which may cause an underreporting of prevalence rates, or indicate

they are not a good sample for the behaviour in question. The latter possibility should be explored in terms of the differences in characteristics of responders and non-responders within populations of interest in forensic psychology research.

Finally, it is possible that social desirability in the general population or hidden populations has similar predictive values to social desirability recorded in forensic populations: individuals who answer with less socially desirable answers may be less likely to cease a specific antisocial behaviour. This leads to ethical issues and considerations embedded in studies using IM-SQ.

Ethical Concerns of Internet Data Collection Methodology in Forensic Research in the General Population

The ethical considerations applicable to the use of IM-SQ studies in general – mainly, maintaining privacy and anonymity of participants and ensuring minimisation of harm to participants – apply also to IM-SQ studies in forensic research. Forensic psychology research by its very nature is likelier to include topics which participants may find sensitive or distressing. Participants may experience a feeling of invasion of privacy when being asked about past experiences with illicit or antisocial behaviours, or distress at remembering potentially traumatic events. A systematic review by Jorm et al (2007) concluded participants in psychiatric research may experience short-term distress, but that this occurs for a minority of participants, and no long-term effects were found. Nonetheless, it is important to develop protocols that can guide researchers on how to support individual participants, which should be adapted for IM-SQ to account for lack of face-to-face contact with participants. Labott et al (2016) discussed that support for participants post-survey can include quantitative measures to assess distress; asking directly about the emotional experience of the participants and offering to make contact if the participant so requests; and providing resources the participant can contact in their own time if need be (these being appropriate to the topic of the study). In studies with more vulnerable individuals, for example from the ASD

communities, this may include resources to support participants such as contact information for mental health support in the case of undue distress.

Perhaps one of the most difficult ethical questions surrounds the very nature of forensic psychology research. Whilst the principle of minimising harm to participants (Convery & Cox, 2012; British Psychological Society Guidelines, 2017) demands that researchers be able to protect participants from harmful consequences to themselves and others as much as possible, this may be difficult if there is evidence that participants are disclosing ongoing illicit behaviours. Some behaviours may be easier to overlook, on the principle that they are not causing a level of harm that may result in serious injury or death; some behaviours may not be possible to follow up, if participants are reporting historical incidents. But what is the researcher to do if a participant may disclose an ongoing illicit behaviour with the potential to harm themselves and others? Ray et al (2010) review the ethical considerations of such research with individuals who used child pornography in the community during the study's completion. Their key message was to understand there may be cases where researcher-participant privilege may not be recognised. This also raises further questions on anonymity; if a researcher comes across data raising concerns of risk of immediate harm, how can this be reported without compromising the participants involved?

Finally, the question of data security is paramount. Individuals may be less likely to participate in research on sensitive topics or antisocial behaviours if they perceive that their responses are not stored securely, or if they do not trust the source of the study (Joinson et al, 2007). The advent of policies such as the General Data Protection (European Union law, 2016) and clearer guidance on how to securely store and process research data (e.g., British Psychological Society Internet-mediated Research Guidelines, 2017; American Psychological Society, 2002) ensures researchers must do all that they can to protect participants from harm due to security breaches that can lead to information leakage.

Conclusions

Internet-mediated surveys and questionnaires have been successfully used for academic research since the 1990s – albeit initially through trial and error – to

facilitate current research in forensic psychology. The research reviewed here indicates that whilst IM-SQ studies are adequate for research, they are not without their flaws, which require further exploration to develop methods of overcoming these. Some questions and topics may be more appropriate to research than others when using such methods.

The validity of IM-SQ is good and comparable to that of paper-and-pencil mediated studies. In order to increase the validity of the data gained via IM-SQ studies, the design of each must be considered. This includes accounting for effects which may be specific to the population under study – for example, designing brief surveys for individuals without steady access to Internet connections; clear and user-friendly questionnaires for individuals less confident with Internet usage; and using methods to retrieve responses from participants which will elicit more honest responding, particularly when discussing sensitive topics.

Recruitment for IM-SQ studies can be one of its pitfalls if not disseminated to the right population via the right resources; this also has to be advertised in a way that is inoffensive and inviting to the target population. However, with the advance of social media and dedicated research websites which advertise IM-SQ studies – as well as clear online ethics and recruitment protocols such as those provided by the British Psychological Society (2017) – recruitment for IM-SQ has become easier, particularly when participants find the topic interesting; Ray et al (2010) indicate that when attempting to increase response rates for IM-SQ studies on sensitive topics, it is important to emphasise the benefits of furthering the understanding of the studied behaviour to the participants.

IM-SQ studies are particularly useful when examining sensitive topics, which is highly relevant to forensic psychology. Extant literature indicates that IM-SQ studies have a good response rate in sensitive topics, as long as privacy and anonymity are guaranteed. Linked to this is research indicating that socially desirable responding, where participants attempt to present themselves favourably, is just as present in IM-SQ studies as in paper-and-pencil. This suggests that perhaps the sensitivity of a topic will not affect whether an individual chooses to engage in the study, regardless of their tendencies to respond in a socially desirable manner. Social desirability is an issue that affects survey research in general, and there are several effective

methods which identify this type of responding that are utilised in IM-SQ studies too.

Finally, future research on ethics of IM-SQ studies in forensic psychology research in the general population or more vulnerable populations, such as the ASD communities, should be considered. Developing protocols of risk assessment on ongoing antisocial behaviours which individuals report may be of importance, as it would potentially support victims in difficult situations or divert serious perpetrators into an assessment. However, this would need to be researched in conjunction with consideration for the ethics of research in the context of anonymity and privacy. The potential for Internet-mediated research to facilitate the growth of forensic psychology research is significant, and with it the development of the potential to study human behaviour in ever-new, ever-changing ways.

Chapter 4: The relationship of Autism Spectrum Disorders, Pathological Demand Avoidance, ADHD, personality trait profiles, and stalking behaviours.

Abstract

Aims: This study examines the relationship of Autism Spectrum Disorders and Pathological Demand Avoidance (a behavioural profile associated with Autism Spectrum Disorders) to stalking perpetration. It is hypothesised that Pathological Demand Avoidance predicts stalking perpetration. Additionally, it is hypothesised that this relationship is mediated by attempted emotional control over others in Pathological Demand Avoidance. Finally, the relationship of Autism Spectrum Disorders and Pathological Demand Avoidance to the HEXACO personality model is also examined.

Methods: Internet-based survey with ethical approval by University of Nottingham. Community and higher education sample, N=145, analysed via multiple linear regression.

Findings: Autism Spectrum Disorders did not predict stalking perpetration, whereas Pathological Demand Avoidance did. However, emotional control did not mediate this relationship. Autism Spectrum Disorders and Pathological Demand Avoidance were associated with lower extraversion, conscientiousness, and agreeableness.

Conclusion: Pathological Demand Avoidance is predictive of stalking perpetration, but not necessarily due to emotional control. Further research into the mechanisms and motivations of stalking perpetration in the context of Pathological Demand Avoidance would be beneficial. The personality traits associated with Pathological Demand Avoidance and Autism Spectrum Disorders were similar to profiles found in previous research of personality models and Autism Spectrum Disorders, as well as in forensic samples. Further research into underlying difficulties in both populations would be beneficial.

Introduction

The systematic review (see chapter 2) identified that psychotic disorders, personality disorders, and substance misuse are more predictive of individuals who are likelier to engage in SBs. However, few to no studies have systematically examined for the presence of neurodevelopmental disorders such as ASD or ADHD in stalkers, much less PDA. Whilst there are empirical studies on the relationship of SBs to ASD, they were not carried out in adults or in naturalistic settings (Stokes et al, 2007; Broadbent, 2011).

As discussed in chapter 1, there are several reasons to consider the possible relationship between neurodevelopmental disorders and SBs. In this thesis the focus is on PDA (see chapter 1) and its specific relationship to SBs, due to the suggestion that underlying the behavioural tendency towards extreme demand avoidance and the implications of this in social interactions is the extreme need for control driven by anxiety. This anxiety may result in SBs due to trying to maintain control over a familiar aspect of one's life during or after a period of acute change and struggling to cope with this abrupt change. Whilst dissimilar to the Coercive Control theory of domestic violence (Dutton & Goodman, 2005) it may be argued that individuals with PDA seek continued control of the victim's environment, which is one of the five conditions of control set out by Dutton and Goodman (2005). In "PDA by PDAers" (Cat, 2018) the participating writers discuss their experiences with the need for control (p.105-107): the control over their personal environment ensures predictability, meaning they can prepare for any possible demand and know how to avoid it or mitigate the resultant anxiety. However, this control can also encompass "manipulation" (p.106; see also Stuart et al, 2020) to ensure the predictable responses of others will still occur. Therefore, the reasons for control over a (potential) victim's environment differ between the contexts of domestic violence, and life with PDA while nonetheless producing similarly coercive results. Logan and Walker (2009) found that individuals who use violence and coercive control over their partners tend to perpetrate SBs after dissolution of the relationship. It is therefore possible that difficulties achieving a sense of control, particularly in relationships with others and dissolution of such relationships – where interactions may not always be predictable, unless they are engineered to be so – may relate to perpetration of SBs in PDA.

Therefore, in this study this particular aspect of PDA is operationalised as 'strategic emotional control' – the ability to manipulate others emotionally to instil a sense of personal control. This is studied here in the context of romantic relationships and their dissolutions, as individuals may feel more comfortable sharing these experiences, particularly online (see chapter 3 for methodology analysis). Evidence reinforcing the possibility that PDA may predict SB comes from Egan et al, (2019) who found that presence of PDA traits in the adult general population can predict higher occurrence of antisocial behaviour – although it is possible that there are other factors, such as personality traits, at play (see also Egan et al, in press). It is predicted that individuals with more traits of PDA in the sample will perpetrate more SBs post-relationships. This is in contrast to individuals with ASD, or perhaps a 'traditional' conceptualisation of ASD, in which individuals do not have turbulent relationships with others and are inhibited in interactions, given persons with ASD are noted to struggle considerably with non-verbal cues and Theory of Mind (Baron-Cohen, 2000). ADHD is also explored in this study due to the relationship of impulsivity and offending behaviour, and the association ADHD has with PDA (Egan et al, in press). In this study, SBs are operationalised as behaviours intended to instigate contact with the target; that may be obsessive in nature; that may be construed as harassing or annoying to the target; and may be threatening or violent towards either the perpetrator or the target in an effort to gain a reaction from them. These are intended to cover a wider range of behaviours which may not necessarily come under the legal definition of stalking perpetration, but which may still be disruptive to the victim, and in some cases even instil fear in them. This is similar to other research-based definitions of stalking, such as Meloy's (1996) "obsessional following" (p.148) or Spitzberg and Cupach's (1998) "obsessive relational intrusions" (referring to an individual persistently pursuing another to initiate a relationship, where this pursuit is unwanted). This broader definition of SBs was used as this study, utilizing general and university-based populations, there may be less cases falling under the legal definition of SBs, but which are still essentially SBs.

With regards to personality trait models, chapter 1 outlines the rationale of exploring these in relation to SBs, and particularly within the category of

neurodevelopmental disorders. Perhaps the most commonly researched personality model is the Five-Factor Model of personality (FFM; Costa & McCrae, 1992). The model consists of five factors, namely Neuroticism (N; the experience and management of negative affect); Extraversion (Ex; the experience and presentation of positive affect); Openness to Experience (O; the interest in new ideas, feelings, and experiences); Agreeableness (A; the experience and presentation of trust, altruism, and compliance with others); and Conscientiousness (C; being dutiful, diligent, cautious, and organised). The FFM has been used to explore personality dimensions that relate to aggression and antisocial behaviours (Miller & Lynam, 2006; Miller et al, 2012; Jones et al; Vize et al, 2018). These studies collectively suggest that individuals who tend to aggression show significantly low A; increased N and Ex predict reactive aggression, and low C predicts proactive aggression. Low A, low C and high N also predict antisocial behaviour. With respect to SBs, Kamphuis et al (2004) found that individuals perpetrating stalking behaviours (SBs) post romantic relationship-termination were likewise more likely to be rated by peers as low on A, C, and high on N factors of the FFM, so following the FFM personality trait profile for general antisociality.

A newer trait model, the HEXACO (Lee & Ashton, 2004) argues on the basis of cross-cultural lexical studies for six rather than five personality factors. In addition to the five mentioned above, Lee and Ashton identified the factor of Honesty-Humility (H) which refers to one's presentation as either an honest, modest individual, or its opposite pole – deceitful and greedy. This led to a rotation of some of the facets within the existing five factors, leading Lee and Ashton to rename N as Emotionality (E), and identifying Extraversion by (X), instead. Some of the facets which had been associated with A in the HEXACO model were found to load onto Emotionality and Honesty-humility; and facets from the Emotionality factor were also found to now load onto the Extraversion factor, instead (Gaughan et al, 2012). Ashton and Lee (2007) argued the HEXACO model was able to explain more variation in personality structure amongst different populations than the FFM, including evolutionary-biological processes that were unaccounted for by the FFM, such as kin-altruism.

The HEXACO model has been used to study antisocial behaviours and antisocial personality constructs such as the Dark Triad (Lee & Ashton, 2005;

Lee & Ashton, 2014; Gaughan et al, 2012) and was found to explain and correlate well with these constructs. Studies examining antisocial behaviours in university and college students (e.g., Smith, 2015; Dunlop et al, 2011) found lower H, X, A and C predicted delinquent behaviours and cyber-bullying. In offenders, Rolison et al (2013) found a similar pattern of lower H, X, C and O factors, but also elevated E. They discussed this in the context of HEXACO rather than FFM's version of N and interpreted this factor as the actual experience and expression of emotions, rather than the narrower experience and management of negative affect; this facet of Emotionality was interpreted to have rotated onto the A factor, as discussed earlier. Međedović (2017) found a similar personality constellation, observing low H, E, A and C in a sample of offenders. Jones (2017) stated that as a result, overall, the HEXACO model is more helpful to understanding antisocial and offending behaviour – as it accounts for more variance within those behaviours. To date, there is no study which examines the personality structures of individuals who perpetrate SBs using the HEXACO.

It is predicted that in line with extant literature, the personality trait profile found here in relation to SB perpetration will include low H, E, A and C. It is yet unclear how this may appear within individuals scoring highly on traits of neurodevelopmental disorders.

Methodology

Sample

Constantino and Todd (2003; 2005) found that many individuals in the general population show traits and symptoms of ASD; additionally, Egan et al (2019) found traits of PDA exist in the general population. This study therefore did not require participants to necessarily have a clinical diagnosis of ASD or PDA, only a score on the screening tools used for this purpose which indicated presence proportion of ASD or PDA traits; this eliminated the need to test the research hypothesis specifically with individuals given a concrete diagnosis of either condition.

Given that the likelihood of committing antisocial behaviours increases with a higher concurrent occurrence of traits of PDA (Egan et al, 2019) it was possible that some stalking behaviours would be observed in this current

sample. Stokes et al (2007) found individuals with ASD were significantly more likely to perpetrate relationally inappropriate behaviours like stalking (using chi-square test, Cohen's w= 0.8, suggesting a large effect size) compared to individuals not diagnosed with ASD; and literature discussed here suggests SBs do occur in individuals with ASD. However, as Stokes' et al (2007) remains the only experimental study on the subject to date, the effect size is conservatively estimated at 0.15 (medium effect size). Using the G*Power programme (Faul et al, 2007) to calculate the required sample size, given a sought significance of p = 0.01 and power of 0.95 to identify type 1 error the calculation resulted in a required minimum of 143 participants were required for this study (see appendix B for G*Power output).

Participants were required to give informed consent, be over the age of 18, and have a fluent grasp of the English language. The final recruited sample size was N=145 (males = 45, females = 93, with 7 participants identifying as "other"). Most (88.2%) of the sample hailed from the UK, the USA, Canada, Australia, and Europe; the results, therefore, are largely applicable to the Western Hemisphere and Western cultures. 77.9% of the sample were aged under 36 years of age, suggesting that more young adults completed the survey – whether due to increased internet access or more interest in the subject matter of the study is unknown. Only 8.28% of the sample had not gone on to attend higher education courses, suggesting that the sample largely comprised highly educated and skilled participants. 44.8% of the sample were currently in education, full or part-time; 49% were currently in employment full or part-time. 14.4% were either unemployed or retired. Participants were also asked whether they had offence histories; 89.7% of the sample stated that they were not cautioned, arrested, or convicted of any crime irrespective of their actual behaviour. Finally, participants were also asked whether they had received any diagnoses of mental or physical health conditions. Over half (51.7%) were clinically diagnosed with a variety of conditions, including Attention Deficit and Hyperactivity Disorder (ADHD); ASD; anxiety disorders and depression; bipolar disorder; personality disorders; and eating disorders (with many participants having multiple diagnoses). In addition, 75% of the sample answered that they suspected they had an undiagnosed condition, largely ASD (16 participants) and depression. Importantly, confirmed diagnoses of ASD accounted for 24.82% of the

sample, suggesting that the results may be applicable to the wider Autistic community.

Recruitment

For the study to reach as large a potential participant population as possible, the study was conducted online; see chapter 3 for discussion of online data collection for use in psychological research. In this manner it is possible that sampling bias may occur, in that only individuals with internet access may be able to participate; however, with the availability of computer access in more public spaces such as libraries and the prevalence of internet-enabled mobile devices, it was expected the study would reach a large proportion of the general population Participants were recruited using social media, online psychology research hubs which advertised research projects for participation across the world (e.g., the University of Nottingham's participation recruitment webpage), and support networks for the ASD and PDA communities, which exist both as Facebook communities and forum communities. These communities provide support for individuals both with a concrete diagnosis of ASD and PDA, and individuals who suspect they may have the conditions. Social media dissemination was carried out via advertisements on social media accounts to the specialist Facebook forums, which led to snowballing recruitment once permission to disseminate the research from administrators of support pages and groups for ASD and PDA communities on social media and community forums was acquired.

Participants were informed that the study was about differences in behaviours before, during, and after romantic relationships, and whether there were significant differences in behaviours between neurotypical and individuals with a higher number of ASD traits in the general population. This ensured participants had a specific context in which to interpret the questions, so as to limit misconceptions and misunderstandings of the questions.

Procedure

Ethical approval was gained from the Department of Psychiatry and Applied Psychology Ethics Committee of the University of Nottingham.

The study was hosted on the Online Surveys website (OS). This is a specialised questionnaire hosting website developed specifically for academic

research purposes (by the Jisc company – www.jisc.ac.uk – who specialise in research solutions for academia). A link to the study was posted alongside the calls for participation on social media platforms. Once participants clicked the link, they were taken to the online study; they were explained the purpose of the study and reassured of the data's security and anonymity and were requested to give informed consent for participation to proceed. To avoid fatigue and boredom during the survey and reduce likelihood of withdrawal, the survey was broken into sections in separate pages, each showing one of the measures used in this study in a table format. The tables were presented on a dull white background to avoid eyestrain. To ensure participants did not miss out any questions, if any rows were left incomplete the webpage warned them of this and made it impossible to progress to the next page; however, as some measures consisted of up to 50 questions, it is possible that participants would occasionally become confused by the rows. Total time for completion was 30-35 minutes. When participants chose to withdraw, they were sent to the debrief screen at the end of the study; this also appeared when participants completed the study in its entirety. The debrief explained the purpose of the study and directed participants to appropriate support resources if they felt they needed additional support after completion.

Instruments

The Autism Quotient (AQ; Baron-Cohen et al, 2001) is a non-diagnostic test for assessing ASD traits in the general population. Its scales measure five domains (full version includes 50 items), four of which were used in this study (as the fifth, Imagination, did not meet criteria for internal reliability); items therefore totalled 40. The threshold score indicating high likelihood of ASD was therefore adjusted from a minimum of 32 to 22, this being a subtraction of the highest score possible on the Imagination subscale): communication (Cronbach alpha of 0.65), social skills (0.77), attention to detail (0.63) and attention switching (0.67) (Cronbach's alpha values from the original paper). The AQ, whilst a relatively reliable instrument to measure traits of ASD in the general population, does have the drawback that it is not unidimensional, i.e. does not measure ASD as a single dimension representing the spectrum, and has rather been found to have several multiple-factor solutions (Lundqvist & Lindner, 2017). However, whilst it does not contain items measuring the

extremely low or extremely high ends of the Autism Spectrum, it does measure from moderately low to moderately high levels of autistic traits (Murray et al, 2016), suggesting that for a study exploring the general population it should still be appropriate for use. In this study, all 145 participants completed this measure.

The Extreme Demand Avoidance Questionnaire, Adult Self-Report (EDA-QA; Egan et al, 2019) assesses PDA traits in adults. It is a 26-item univariate scale with a Cronbach alpha of 0.94, indicating high internal validity.

The WHO Adult ADHD Self -Report Scale (AASRS; Kessler et al, 2007) is a self-report 6-item screening scale for ADHD. Its internal reliability ranges from .63 to .72. Its inclusion in this study is to assess whether it is possible that some respondents who score highly on the EDA-QA may have conflating symptoms to ADHD, and whether this impacted the analysis results.

Emotional Manipulation Scale (EMS; Austin et al, 2007) has 25 items and examines factors of strategic emotional control. It consists of three scales: emotional manipulation (Cronbach alpha of .88); poor emotion skills (.66); and concealment (.73).

The Courtship Behaviour Scale (CBS; Stokes et al, 2007). It consists of two dimensions: a Social Functioning subscale (Cronbach alpha of 0.90) which measures socialisation and understanding of social relationships; and the Romantic Functioning subscale (Cronbach alpha of 0.72) which measures the participants' understanding of and desire for romantic relationships. The first scale was used in the analysis of this study, as it included a checklist of SBs which participants may have knowingly or unknowingly done in the context of romantic relationships. The checklist is scored as a summation of all behaviours ever performed, rather than as a mean average.

The Courtship Behaviour Scale subscales are not psychometric scales, and as such may not produce good reliability scores. However, as they are the only extant scales in this field of research, they were deemed acceptable for use, on the basis that they would be able to provide a broad initial exploration into the topic and a guidance for future, more specific, research. The original

format addresses parents with regards to their children's behaviours (though the questions are applicable to adolescents and adults), and its wording was adjusted to self-report format.

The HEXACO-60 (Ashton & Lee, 2009) is a shorter version of the HEXACO Personality Inventory (Lee & Ashton, 2004). This scale includes 10 items for each of the 6 factors of personality in the model: Honesty-Humility (.74), Emotionality (.73), Extraversion (.73), Agreeableness (Cronbach alpha value of .75), Conscientiousness (.76), and Openness (.80) (Cronbach's alpha values from the original short version paper). All Cronbach alpha values for each factor indicate high internal validity.

Analysis

This study utilised a cross-sectional design of one population sample and was appropriate for exploratory analyses in the general population. Analysis was carried out in SPSS version 22 for Windows operating system (IBM, 2013).

Reliabilities were calculated for each instrument as applied to the current sample. Kline (1999) states a Cronbach's alpha value of .7 is acceptable to denote an instrument is internally consistent and reliable, though for some psychological constructs a lower value may still be acceptable. The EDA-QA, the AASRS, and the full AQ withstood this criteria. However, sub-scales of the AQ (Social Skills and Attention to Detail) did not; as they contributed to the overall reliability of the AQ scale they were retained in the analysis but were not used in post-hoc exploration.

The data was checked for marked deviations from the normal distribution by means of skewness and kurtosis. The Following Behaviour items showed a large positive skew; this is likely as these behaviours are by their nature expected to be uncommon in the general population. However, the skewness factor was still between the values of +-2, suggesting it was still appropriate to use the variable for analysis (Field, 2009). No predictor variables were significantly skewed, suggesting that despite the relative rareness of ASD and PDA in the general population (1.8%; Brugha et al, 2011) the sampling reflected more individuals with ASD participating.

Due to the presence of multiple independent variables, many correlations would be needed to interpret the data. As the study hypothesised

a directional relationship, multiple regression analysis was deemed suitable to analyse the data and has the added benefit of calculating the contribution of each variable to the observed dependent value. The scores of the EDA-QA and AQ questionnaires served as predictors in the main analysis, and items from Courtship Behaviour Scale (which quantified following and SB) as dependent variables (the checklist portion of the Social Functioning Subscale, hereafter referred to as "Following Behaviours"); this was the only portion of the Courtship Behaviour Scale subscales which was used in the analysis, so its reliability only is calculated as opposed to the full Courtship Behaviour Scale. The AASRS was used as a predictor in the third step of the multiple regression process to assess whether symptoms of impulsivity and inattention impacted the relationship of PDA and ASD to following behaviours. Finally, the EMS was added to investigate whether it mediated the relationship between PDA and Following Behaviours, as a possible explanation for the mechanism underlying the observed behaviours. This was completed using Hayes' (2017) PROCESS macro for SPSS, which conducts mediation and moderation analyses, and uses bootstrapping rather than the Sobel test to assess the significance of the mediation model. Bootstrapping has become a more popular method of significance testing in mediation analysis, as it circumvents the assumption of normality in the sample – thus allowing both normally and abnormally distributed data to be analysed.

Results

Main Analysis

Table 4.1 shows instrument means, standard deviations, and reliabilities for the instruments utilised and their subscales.

Instrument	Mean	Standard Deviation	Cronbach's Alpha
Extreme Demand Avoidance Questionnaire-Adults	48.84	12.21	.89
Autism Quotient	21.54	8.39	.89
- Attention to detail	5.73	2.15	.58
- Attention switching	6.01	2.89	.81
- Communication	4.32	3.14	.84
- Social skills	5.47	1.82	.30
Adult ADHD Self - Report Scale	18.37	5.09	.77
Emotional Manipulation Scale	52.63	10.78	.79
- Emotional Manipulation	27.66	9.46	.92
- Poor Emotion-regulation Skills	10.48	4.35	.83
- Emotion Concealment	14.49	4.45	.9
Following Behaviours Checklist	3.83	7.82	.73
HEXACO – Honesty-humility	36.73	6.83	.73

Emotionality	32.66	7.37	.77
Extraversion	26.72	7.96	.83
Agreeableness	29.66	7.05	.77
Conscientiousness	37.44	5.94	.72
Openness	37.35	6.87	.74

Table 4.0.1 Means, standard deviations, and reliabilities of the instruments used in analysis, as well as gender differences in means of instruments. N=145. Note the HEXACO dimensions do not have cut-off scores as they are a dimension rather than a categorical entity.

Tables 4.2 shows Pearson correlations the EDA-QA, AQ, EMS, AASRS and Following Behaviours (with Holms-Bonferroni correction for multiple correlations utilised, as variables are all related). EDA-QA correlated positively and significantly with all variables, as did the AQ (except Following Behaviours, with which there was no significant relationship).

	AQ	**Following Behaviours**	**AASRS**	**EMS**
EDA-QA	.35***	.25**	.51***	.46***
EMS	.19*	.22**	.29***	
AASRS	.47***	.06		
Following Behaviours	.07			

*Table 4.0.2 Pearson product-moment correlations (1-tailed) including p-values between the measures utilised in the study. EDA-QA - Extreme Demand Avoidance Questionnaire, Adult version; AQ - Autism Quotient; AASRS - Adult ADHD Self-Report Scale; EMS – Emotional Manipulation Scale. * - significant at the .05 level; ** - significant at the .01 level; *** - significant at the .001 level or below. N=145*

Table 4.3 shows correlations between the EDA-Q, Following Behaviours, and the 6 HEXACO dimensions. The table indicates EDA-QA has a significant negative relationship with the personality factors of agreeableness, conscientiousness, extraversion, and honesty-humility. Following Behaviours, showed a strong positive correlation with the emotionality and honesty-humility factors of the HEXACO-60.

	EDA-QA	**Following Behaviours**
Honesty-humility	-.21*	-.27***
Emotionality	.02	.23*
Extraversion	-.33***	.01
Agreeableness	-.38***	-.12
Conscientiousness	-.32***	.07
Openness	.02	.07

*Table 4.3 Pearson's product-moment correlations and significance values (1-tailed) between Extreme Demand Avoidance Questionnaire (Adult) and Following Behaviours checklist, and HEXACO-60 subscales. * denotes significance value at the .05 level; ** denotes significance value at the .01 level; *** denotes significance value at the .001 level or below. N=145.*

The sample was also tested to see if there were differences between non-diagnosed, self-diagnosed, and formally diagnosed individuals with ASD on the AASRS, EDA-QA, EMS, and Following Behaviours. A one-way ANOVA revealed a significant difference between mean scores of the EMS between groups ($F(2,142) = 4.09$, $p = .019$); this showed a significant difference between mean scores of the EDA-QA between groups ($F(2, 142) = 10.40$, $p < .001$); and a significant difference between mean scores of the AASRS between groups ($F(2, 142) = 10.46$, $p < .001$). There were no significant differences between means scores on the Following Behaviours measure.

Post-hoc analyses (using a Bonferonni correction) revealed the mean score on the EMS was significantly higher in the self-diagnosed group than the non-diagnosed group (mean= 8.03, $p = .015$). The post-hoc analyses also showed the self-diagnosed group had a significantly higher mean score on the EDA-QA than the non-diagnosed group (mean = 11.71, $p = .001$); the

formally diagnosed group also had a significantly higher mean score on this measure than the non-diagnosed group (mean = 8.31, p = .009). Finally, the self-diagnosed group had a significantly higher mean score on the AASRS than the non-diagnosed group (mean = 4.85, p = .001); the formally diagnosed group also had a higher mean score on the AASRS than the non-diagnosed group (mean = 3.32, p =.007). No other significant between-groups differences were found. See appendix E for a table detailing means and standard deviations for all groups on the measures.

A multiple regression analysis was conducted to find whether the presence of PDA and ASD traits predicted Following Behaviours; the presence of PDA traits explained 6.4% of the variance (F (1,141) = 9.61, p = 0.002) and exerting a strong influence on the model, with ASD traits explaining no additional portion of the variance (ΔF (1,140) = 0.02, p = n.s.). The initial model indicates that the number of following behaviours committed rose by 5.8% for each additional point scored on the EDA-QA (t = 3.05, p < 0.05). In comparison, the number of following behaviours committed decreased by 0.5% with each point scored on the whole AQ measure.

The AASRS and EMS were then added to the model to assess any additional predictive value provided by these measures. AASRS scores explained 0.6% of variance overall (ΔR^2 = .03; ΔF (1,139) = .83, p = n.s.); the full EMS scale explained another 1.7% of variance (ΔR^2 = .017ΔF (1,138) = 2.56, p = n.s.). Neither exerted further predictive influence within the model.

	Predictor	B	Std. Error (B)	β	Significance
1	Constant	.25	1.26		n.s.
	EDA-QA	.05	.02	.23	.02
	AQ (Total)	.44	.59	.01	n.s.
	AASRS	.17	.53	-.10	n.s.
	EMS (Total)	.03	.02	.44	n.s.

Table 4.4: Hierarchical regression using Extreme Demand Avoidance Questionnaire for Adults, Autism Quotient, Adult ADHD Self-Report Scale, and Emotional Manipulation Scale as predictors for Following Behaviours – showing the final model only.

A second multiple regression analysis was conducted to find whether the HEXACO personality model with presence of PDA traits added at the second step had a predictive relationship with Following Behaviours.

The HEXACO model explained 14.4% of the variance (F (6,136) = 3.82, p = 0.001) and exerting a strong influence on the model. Adding the EDA-QA scores to the model at the second step explained an addition 5% of the variance (ΔF (1,135) = 8.30, p = .005). Each additional point on the Following Behaviour scale was predicted by a decrease in 1.09 points in total score on the Honesty-humility scale (t = -3.22, p = .002), and an increase in .81points in the total score on the Emotionality scale (t = 2.73, p = .007). In the second model, where EDA-QA was added, each additional point scored by participants on the Following Behaviour scale was predicted by a decrease in .93 points on the Honesty-humility scale (t=-2.78, p = .006); an increase in .77 points on the Emotionality scale (t = 2.64, p = .009); an increase in .77 points on the Conscientiousness scale (t = 2.01, p = .046); and an increase in .06 points on the EDA-QA scale (t = 2.88, p = .005).

	Predictor	B	Std. Error (B)	Standard-ised β	Significance
2	Constant	-2.15	3.15		n.s.
	Honesty-humility	-.93	.33	-.23	.006
	Emotionality	.77	.29	.20	.009
	Extraversion	.08	.29	.02	n.s.
	Agreeableness	.07	.33	.01	n.s.
	Conscientiousness	.77	.38	.16	.046
	Openness	.17	.31	.04	n.s.
	EDA-QA	.06	.02	.26	.005

Table 4.5: Hierarchical regression using Extreme Demand Avoidance Questionnaire for Adults, and HEXACO-60 as predictors and Following Behaviours checklist as dependent variable. Legend: ΔR^2 at step 1 = .144, p = .001; ΔR^2 at step 2 = .050, p = .005. Second model only shown.

HEXACO and PDA Analysis

Finally, a linear regression procedure assessed the predictive relationship of the HEXACO model on the presence of PDA traits in participants.

The model indicated that the HEXACO-60 explained 31.2% of the variance in the EDA-QA scores, $F(6,138) = 10.44$, $p < 0.001$). each additional point scored on the EDA-QA was predicted by a decrease in 4.06 points on the Extraversion subscale; a decrease in 5.06 points on the Agreeableness subscale; and a decrease in 5 points on the Conscientiousness scale.

	Predictor	B	Std. Error (B)	β	Significance
1	Constant	98.60	9.56		<.001
	Honesty-humility	-2.58	1.33	-.14	n.s.
	Emotionality	.81	1.17	.04	n.s.
	Extraversion	-4.06	1.13	-.26	<.001
	Agreeableness	-5.06	1.28	-.29	<.001
	Conscientiousness	-5.00	1.49	-.24	<.001
	Openness	.45	1.25	.02	n.s.

Table 4.6: Hierarchical regression using HEXACO-60 as predictor and the Extreme Demand Avoidance Questionnaire for Adults as the dependent variable.

Post-hoc Analysis

Only two of the four AQ subscales in this study were found to have a Cronbach's alpha value of above .7 (Communications and Attention Switching). These were explored using a multiple linear regression in post-hoc analysis but had no significant predictive relationship with the Following Behaviours checklist.

As discussed in the introduction, a secondary hypothesis was presented regarding whether emotional control was a possible underlying mechanism for PDA's hypothesised relationship to Following Behaviours. Though the main analysis indicated that adding the EMS to the overall model resulted in no additional predictive value, it explained more variance than the AQ and AASRS. To explore this, a mediation analysis was conducted in which EDA-QA scores served as the predictor; Following Behaviours as the outcome variable;

and EMS scores as the mediating variable. The sample size for this analysis was N=143, as two participants did not fully complete the EMS.

At the first step, regression of EDA-QA on following behaviours, ignoring the mediator variable, was significant ($b = .057$, $t(1, 141) = 3.10$, $p = 0.002$). At step 2, the regression of EDA-QA on the mediator, the EMS scale, was significant ($b = .4124$, $t(1, 141) = 6.25$, $p < .001$). At step 3 of the mediation process, the EMS scale (controlling for EDA-QA) was not significant ($b = .036$, $t(2, 140) = 1.54$, $p =$ n.s.); at step 4, controlling for EMS, EDA-QA was still a significant predictor of Following Behaviours ($b = .057$, $t(1, 141) = 3.10$, $p = .0023$). This shows that there is no evidence of mediation by the EMS scale to explicate the relationship between the EDA-QA and Following Behaviours.

Discussion

This study examined the relationship between PDA and ASD and self-reported stalking behaviours (SB) in adults in the general population; the possibility of strategic emotional control as an underlying mechanism for this; and the relationship of the HEXACO personality model to PDA and SBs.

The results demonstrated a small but significant predictive relationship between traits of PDA in adults in the general population and SB, but no relationship between traits of ASD in adults in the general population and SB. Adding a screening measure of ADHD and measures of strategic emotional control to the regression model made no significant improvement to this prediction, indicating that most of the variance which could be explained by the relationships of ADHD and strategic emotional control to SB was already accounted for by PDA.

The analysis of the HEXACO model and PDA indicated that lower levels of the Honesty-humility factor traits and higher levels of the Emotionality factor traits predicted SBs. When PDA was added to the model, it was also a significant predictor of SBs, and H and E remained significant; however, the C factor also became a positive predictor of SBs. A second analysis revealed that the HEXACO dimensions of E, A, and C were negatively and significantly related to PDA; H was not a significant predictor of PDA traits in participants but did approach significance.

Post-hoc tests revealed that the AQ subscales Attention-switching and Communication did not have a significant predictive relationship with SB. In addition, a mediation analysis examining whether strategic emotional control mediated the relationship between PDA and SB and acted as a possible underlying mechanism driving SB in relation to PDA was not significant, suggesting that strategic emotional control, though related to PDA, was not significantly related to SB itself.

These findings raise questions about the role of PDA and ASD in perpetration of SBs. Firstly, why might PDA predict SB but not via the strategic emotional control hypothesis; and secondly, why might there be a lack of predictive relationship between ASD and SB? Extant literature suggests an unclear relationship between ASD and antisocial behaviour (see chapter 1), and a distinct lack of studies on ASD and stalking perpetration (Mercer & Allely, 2020) limits comparison of these findings with the wider literature. However, Stokes et al (2007) found that ASD presence was related to SBs, which contrasts with the findings here. This may be due to methodological differences; whilst the same scale was used to measure SBs, Stokes et al (2007) used a mixture of other-report and self-report and a sample of adolescents and adults, whereas this study used self-report only with a sample of adults only. It is therefore possible that further research into the risk of SB by adolescents with ASD needs to be conducted.

Questions also arise with regards to the HEXACO personality trait profile of individuals who engage in SBs, and individuals with PDA – most importantly, about the positive predictive relationship of C to SB perpetration. These are further discussed in chapter 6.

The results also raise questions about the sample itself. As discussed in chapter 1, most stalking perpetrators tend to be male. However, the sample in this study indicated that most participants here were female. In conjunction with the results indicating a relationship between PDA and SB perpetration, this may indicate that in a general/university population, SBs may be more prevalent in females than previously thought. It is possible that the severity or frequency of different SBs perpetrated is different between males and females, contributing to the observed relationship of PDA and SB. It is also possible the

gender disparity interacts with the individual levels of ASD and PDA traits in the sample, which would be interesting to analyse.

As it stands, this chapter indicates that the relationship between PDA and SB may hold true for females rather than males. The next chapter will interrogate the data in the context of gender and ASD/PDA trait levels in individuals to shed further light on these results.

Chapter 5: The relationship between ASD, PDA, gender, and stalking behaviours.

Abstract

Aims: Gender disparity in the sample was identified in the previous study. It is necessary to examine whether this impacts the findings of the previous study. It is also worth examining due to gender differences in Autism Spectrum Disorders symptomatology, and to add to the literature on Pathological Demand Avoidance symptomatology.

Methods: Internet survey with ethical approval from the University of Nottingham. Community and higher education sample, N=145; analysis was completed using one-way ANOVA, independent samples t-test, and multiple linear regression. Specific stalking behaviours were analysed to assess whether their perpetration was different across genders using chi-square analysis.

Findings: Gender by itself did not predict stalking perpetration and did not impact the relationships found in the previous study. However, it was found that participants generally scoring more highly for Autism Spectrum Disorders showed lower extraversion. Participants, both male and female, scoring more highly for Pathological Demand Avoidance traits, showed lower extraversion. However, only females who scored more highly for Pathological Demand Avoidance traits were more likely to perpetrate stalking, though this is considered with respect to the sizes of the sub-samples. The chi-square analysis showed no significant overall differences in distribution of specific stalking behaviours across genders.

Conclusions: Gender by itself does not appear to predict stalking perpetration, but in relation to Pathological Demand Avoidance it did; this requires further study on larger community samples, especially for replication purposes.

Introduction

The previous chapter indicated that presence of PDA traits in individuals in general and university populations predicted perpetration of SBs in the context of relationship dissolution, and that presence of ASD traits did not. Furthermore, two personality dimensions from the HEXACO personality traits model – high H and E – predicted perpetration of SBs independently of presence of PDA traits, and that lower X, lower A and lower C dimensions scores predicted presence of PDA traits in the general and university population.

However, the sample distribution of gender may have impacted the results; this requires a broader examination of the gender discrepancies that may exist in this sample.

Interrogating the data further with regards to gender balance in the sample touches on several wider issues of gender in research, ASD, and stalking perpetration, and the relationship between these constructs.

Porter and Whitcomb (2005) noted that participants who are more responsive to calls for participation in survey studies are more likely to be female; they are more likely to be socially engaged (that is, active in their social circles and extracurricular activities); and (based on the Holland personality types, 1966, 1985) more likely to be investigative – that is, more likely to be academic and intellectual. This finding was replicated by Kolek (2012). Therefore, there is some evidence that the gender balance seen in this sample is to be expected, particularly as the study uses online survey methodology. It is notable that this pattern holds despite recruitment advertisements being posted outside university research recruitment websites. The social media and forums targeted for participation advertisements were specifically intended for audiences in the autistic and neuro-diverse community; whilst not a hidden population (see chapter 3 for methodological discussion of this) they are a relatively small subsection of the general population. There are few studies exploring non-response bias in hidden populations, and they mostly touch on sexual minorities (Koch & Emery, 2002); cannabis growers and users (Duncan et al, 2003; Barratt et al, 2014). These studies indicated no significant differences between demographics of

those who responded to these internet surveys and those who did not; this suggests that perhaps there is no significant difference between those who tend to respond more to online research surveys in university and hidden populations, at least in the sample presented in this thesis. It is possible that further research into how individuals with ASD respond to internet surveys is merited.

Another issue is that of how ASD (and perhaps PDA) differentially present by gender. Kreiser and White (2014) discuss several theories of gender variance in ASD, noting that gender ratios have been estimated to be approximately 5.75:1 male to female in autistic individuals without learning disabilities. Baron-Cohen's "extreme male brain" hypothesis (see Baron-Cohen & Hammer, 1997) suggested that male and female brains differ in their neurophysiology; male brains tend towards systematising the world around them, whereas female brains tend towards empathising with the world around them. The behavioural pattern associated with the male brain is one which is observed more often in ASD, leading to the label of the hypothesis. Wing (1981) suggested that when ASD is visible in females, it tends to be the result of more severe psychopathology. Kreiser and White (2014) argue that ASD in women is not present to a lesser degree due to genetics or epigenetics, but rather it may be under-identified or misdiagnosed, especially when diagnosis is based on e.g., DSM-5, which often hinders or delays women from receiving an appropriate diagnosis. This may be due to women's ability to 'mask' their symptoms and internalise their difficulties via social camouflaging (see Eaton, 2018) and to engage in less stereotypical behaviour interests (Allely, 2019) whereas men are more likely to display externalising behaviour which is associated more readily with a diagnosis of ASD. This argument is echoed in Rivets and Matson (2011) and Eaton (2018); Kopp and Gillberg (1992) go so far as to say this is because the diagnostic criteria for ASD is largely based on cases observed in males only.

With regards to PDA, extant research indicates the gender ratio is much closer to 1:1 (Newson et al, 2003; Gillberg et al, 2015; Eaton, 2018). There are also no apparent significant differences in the way symptoms manifest between genders.

With respect to the HEXACO personality trait model generally, Lee and Ashton (2004) indicate that there were no major differences between genders excepting H and E, women scoring significantly more highly than men on these dimensions.

As discussed in chapter 1, stalking is by and large perpetrated by males, but there are cases of female stalkers (see chapter 2). The salient point in comparison between genders of stalking behaviours is whether they perpetrate the same or different types of behaviours, and whether they do so at comparable rates. For example, Meloy et al (2011) found that women sent more gifts to their victims, made fewer threats, and were significantly less violent than men; they were also more familiar with their victims compared to males, who had higher rates of pursuing strangers. However, this study was completed on distinctly forensic cases and does not account for cases or occurrence in the general population. Sinclair and Frieze (2000) studied courtship behaviours and stalking perpetration in a university sample, examining when such behaviours were perceived to cross the line into stalking perpetration. They completed a factor analysis on the range of behaviours, categorising them into approach, surveillance, and intimidation to harming self, verbal abuse, and serious physical harm factors. They found that most participants engaged in surveillance behaviours, men were more likely to engage in approach behaviours (i.e., non-violent direct contact), but few escalated into intimidation. Those who did intimidate were also more likely to escalate into self/verbal/physical harm behaviours. Importantly, Sinclair and Frieze found that men and women were overall equally likely to engage in this range of stalking behaviours, despite having a female respondent majority. Other studies using community or university samples, such as Wallace et al (2019), Thompson and Dennison (2008), Haugaard and Seri (2004), and Langhinrichsen-Rohling et al (2000) also had female-majority samples and found comparable rates of SBs between the genders. Haugaard and Seri (2004) replicated Sinclair and Frieze's (2000) finding that males and females perpetrated specific stalking behaviours at comparable rates, with no significant differences between genders, though their final sample of respondents who perpetrated stalking was smaller than that of Sinclair and Frieze (2000). This was also found in Wallace et al (2019) who used a

university convenience sample and found no difference between the rates nor types of SBs perpetrated. Thompson and Dennison (2008) noted that nearly 75% of females in their sample had perpetrated low-level SBs in response to relationship dissolution – the same context in which the current thesis is examining SBs.

Taking these findings together, it is possible that less females face the criminal justice system for more violent SBs than males and are therefore less visible in the forensic context – and it is not necessarily that females in general perpetrate less SBs. Smoker and March (2017) found that women perpetrated more cyber-stalking than men did; Turton (2010), for example, discusses female sexual offenders and their perceptions by various agencies involved in child safeguarding and protection. Turton argues that society views women as maternal and nurturing, which conflicts with the almost subversive idea that women can be sexually aggressive. This can lead to denial by child protection professionals; at times this can be outright denial of events, or partial denial where professionals argue that the mother-child caring boundaries have slipped. It may similarly be argued that women who perpetrate SBs may not be identified or apprehended due to the perception that women do not stalk as much as men (and especially in the forensic context as noted in chapter 2).

This study therefore poses the following research questions:

1. Is gender a significant predictor of SBs in this sample? Given the literature, it is likely that it will not be.
2. Are there any significant differences on the predictor variables of ASD, PDA, and the HEXACO based on gender in this sample? These differences, if identified, may themselves impact the relationships examined in the previous chapter.
3. Finally, are there any differences in the specific stalking behaviours between the genders? As the literature reviewed shows, there are some expected differences in specific behaviours so it is possible that such differences may be seen in this sample as well.

Methodology

The sample is identical to that presented in the previous chapter. To analyse the effect of gender on the results previously presented, SPSS version 24 was used, and gender was added as a variable. All other measures remained identical to those utilised in the previous chapter. The sample consisted of 45 male participants, 93 female participants, and 7 participants who identified as "other". Literature indicates that individuals who identify as transgender or 'gender-diverse' have higher rates of diagnosed ASD than individuals who identify with their assigned gender (Warrier et al, 2020); George and Stokes (2018) found that individuals with ASD also presented with more gender-dysphoric traits compared to non-ASD individuals. It is therefore likely that the sample is fairly representative of an autistic population.

The group identifying as "Other", though significantly smaller than the other two, were still included in the analyses for the sake of completeness but are not interpreted as there is not enough data to do so. All methodological details are to be found in chapter 4.

The sample was first analysed for any significant differences in means between genders using one-way ANOVA, the dependent variables being Following Behaviours, ASD, PDA, and the HEXACO personality trait model. The model was corrected using a Holms-Bonferroni correction, as it does not assume the variables are independent, nor is too stringent as a Bonferroni correction may be (Chen et al, 2017). Independent samples t-tests were completed for ASD and PDA to assess whether high or low levels of ASD and PDA traits led to any significant differences in scores on Following Behaviours and HEXACO and corrected with a Holms-Bonferroni correction. Testing the effects of high or low ASD and PDA traits was not possible via a one-way ANOVA, as this required three or more groups in the independent variables. To complete the independent samples t-test, the AQ and EDA-QA were dichotomised into high or low-scoring categorical variables. The AQ was recoded where any participant scoring 22 or above was classed as 'high on ASD traits', and any participants scoring below 22 was classed as 'low on ASD traits' (chapter 4 explains the case for using 22 as the threshold score in this study). The EDA-QA was re-coded in the same way; a score of 45 or above classed a

participant as 'high on PDA traits' and a score of less than 45 classed a participant as 'low on PDA traits'. The score of 45 was chosen as a threshold due to O'Nions et al.'s (2014) suggestion that this cut-off discriminated well between individuals with and without PDA. O'Nion's study was completed on a cohort of individuals under 18, but remains the only study testing the EDA-Q on individuals with diagnoses or suspicions of PDA (Egan et al.'s 2019 study did not test the EDA-QA specifically on individuals with PDA so threshold scores for individuals above the age of 18 do not exist at present).

Finally, a multiple regression was then completed, with gender, AQ, EDA-QA and HEXACO as predictors, and Following Behaviours as outcome. This enabled to control for gender and explicate the results found in the previous chapter. An ANCOVA, initially considered, would not have been appropriate as the variances in the groups are not equal (thus violating a basic assumption of the test).

Results

Table 5.1 shows means and standard deviations of gender group scores on EDA-QA, AQ, Following Behaviours, and HEXACO personality traits model.

Instrument	**Males (N = 45)**		**Female (N = 93)**		**Other (N = 7)**	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Extreme Demand Avoidance Questionnaire -Adults	51.71	11.13	47.83	12.51	43.71	12.45
Autism Quotient	24.13	7.31	19.89	8.67	26.85	4.14
Following Behaviours Checklist	3.86	2.91	3.94	2.73	3.28	2.81
HEXACO –	3.69	.72	3.64	.67	3.92	.54

Honesty-humility						
Emotionality	2.8	.63	3.5	.65	3.07	.99
Extraversion	2.34	.73	2.83	.8	2.62	.41
Agreeableness	2.93	.72	2.95	.71	3.28	.35
Conscientiousness	3.61	.59	3.79	.59	3.94	.45
Openness	3.69	.65	3.72	.7	4.1	.65

Table 5.1 Means, standard deviations, and reliabilities of the instruments used in analysis, as well as gender differences in means of instruments. Note the HEXACO dimensions do not have cut-off scores as they are a dimension rather than a categorical entity.

Main Analysis: comparison across genders.

A one-way ANOVA was completed to assess the differences in means on Following Behaviours, AQ, EDA-QA, and the HEXACO dimensions between the genders. There was no significant effect of gender on Following Behaviours or EDA-QA scores. Post-hoc multiple comparison analysis (corrected with Games-Howell, as equal variances were not assumed) indicated that the significant differences between genders were for AQ scores, and the E and X dimensions of the HEXACO personality traits model.

'Other'-gendered participants had higher mean scores on the AQ than Females (mean difference = 6.96, $p < .01$); this result should be interpreted with caution, however, as the group sizes are quite different. Males had higher mean scores on the AQ than did Females (mean difference = 4.24, $p < .01$).

Females had higher scores on the E dimension than Males (mean difference = .7, $p < .001$); and higher scores than Males on the X dimension (mean difference = .48, $p < .01$).

Independent Samples T-Tests

Independent samples t-tests were completed to assess the effect of the interaction of gender with high and low scores on the AQ and EDA-QA on the HEXACO dimensions and Following Behaviours. The analysis was first completed on the high and low scoring groups for each measure without accounting for gender, to see if there was an effect which needed further exploration.

Participants with lower levels of ASD traits scored more highly on the X dimension than those with higher levels of ASD traits, t (143) =9.44, p <.001. On further examination, males with lower levels of ASD traits scored more highly on the X dimension than those with higher levels of ASD traits, t (43) = 3.02, p < .01. Females with lower levels of ASD traits scored more highly on the X dimension than those with higher levels of ASD traits, t (91) = 9.07, p < .001. There were no other significant differences, either in general or specifically between genders.

Participants with lower levels of PDA traits had lower Following Behaviours scores than participants with higher levels of PDA traits, t (140.95) = -3.25, p < .01. Females with higher levels of PDA traits had higher Following Behaviours scores than females with lower levels of PDA traits, t (91) = -2.20, p < .05. Males showed no significant differences on Following Behaviours. Participants with lower levels of PDA traits scored more highly on the X dimension than those with higher levels of PDA traits, t (136.92) = 3.92, p <.001. Females with lower levels of PDA traits scored more highly on the X dimensions than females with higher levels of PDA traits, t (91) = 3.04, p < .005. Males showed no significant differences.

Participants with lower levels of PDA traits scored more highly on the A dimension than participants with higher levels of PDA traits, t (142.97) = 3.28, p < .01. Females with lower levels of PDA traits scored more highly on the A dimension than those with higher levels of PDA traits, t (91) = 2.73, p <.01. Males showed no significant differences.

Finally, those with lower levels of PDA traits scored more highly on the C dimension than those with higher levels of PDA traits, t (143) = 3.48, p <.01. Females with lower levels of PDA traits scored more highly on the C dimension than females with higher levels of PDA traits, t (91) = 2.74, p <.01.

Multiple Linear Regression

The linear regression model indicated that gender by itself did not explain any significant variance in Following Behaviours scores. Adding the AQ to the model did not explain any significant variance either, but when EDA-QA was added, it explained 5.7% of the variance, ΔF (3, 139) = 8.44, p <.01. When

the HEXACO dimensions were added, they explained an additional 13.8% of variance, ΔF (9, 133) = 3.83, p = .001.

	Predictor	B	Std. Error (B)	β	Significance
1	Constant	-2.86	3.31		
	Gender	-.27	.41	-.057	N.S.
	AQ	.03	.03	.11	N.S.
	EDA-QA	.05	.02	.24	.01
	Honesty-humility	-.98	.33	-.24	.004
	Emotionality	.89	.31	.23	.006
	Extraversion	.35	.37	.10	N.S.
	Agreeableness	.08	.33	.02	N.S.
	Conscientiousness	.70	.39	.15	N.S.
	Openness	.15	.31	.03	N.S.

Table 5.2: Hierarchical regression using Gender, EDA-QA, AQ and HEXACO-60 as predictors Following Behaviours as the dependent variable.

Post-Hoc Analysis

Despite there being no significant impact of gender on Following Behaviours, it was possible that the distribution of gender across the specific SBs identified in the Courtship Behaviour Scale differed in some way. Therefore, a frequency and chi-square analyses by gender groups were completed.

Courtship Behaviour Scale item	Male	Female	Other
Texted them a lot	22	29	5
Instant messaged or emailed them a lot	21	34	3
Sent them gifts	8	13	1
Waited outside their home or work	6	14	1
Followed them home or work	1	2	0
Monitored them online	15	41	3
Initiated social contact	20	41	5
Fantasised about them	21	38	
Showed affection despite not being in a relationship	13	28	0
Believed they reciprocated my feelings	10	24	2

Contacted their family or friends	5	13	1
Made inappropriate gestures	3	3	1
Made inappropriate comments	4	4	1
Touched them inappropriately	2	1	0
Stolen or damaged their property		2	0
Threatened to harm them	0	0	0
Threatened to harm myself	1	6	1
Pursued them in a way that was threatening	1	0	0
Other	5	0	1
I have never done any of these	8	18	0

Table 5.4 Frequency comparisons of Courtship Behaviour Scale items across genders.

A chi-square analysis showed that there was no significant association of gender and specific stalking behaviours, except for calling or texting (χ^2 (2) = 7.35, p = .023) and Other (χ^2 (2) = 11.34, p = .003).

In addition, the 20 items in the list were sorted into categories where (1) participants made no direct contact with the target; (2) where non-violent direct contact was made with target (or family and friends); and (3) where violent direct contact was made (item 17, "threatened to harm myself", was included in this category as it is violent). This was completed to assess whether genders differed in their preferred contact method of a target. Frequency and chi-square analyses were completed to examine the proportions of each gender falling into each category. Chi-square analysis indicated no significant differences between these proportions (χ^2 (4) = 2.40, p = non-significant).

Category	**Male**	**Female**	**Other**
1	19	40	1
2	20	41	5
3	6	12	1

Table.5.4 Frequency comparisons of categorised Courtship Behaviour Scale items across genders.

Discussion

The findings, overall, indicate that gender by itself did not significantly impact the relationships found between ASD, PDA, and SBs. However, the findings indicated that gender in the context of EDA-QA scores did impact the relationship of PDA and SBs, showing that women who had more PDA traits were the ones more likely to perpetrate SBs.

This finding corroborates evidence that women in community samples demonstrate as many, if not more, SBs (Wallace et al, 2019; Thompson et al, 2012). In particular, it suggests that symptoms in the PDA profile may provide unique risk markers in women in higher education and the community for perpetration of SBs and unwanted pursuit of targets post-relationship dissolution. However, the sizes of the male and female samples who were divided according to high and low scores on the AQ and EDA-QA were not equal (there were 47 women who had higher levels of PDA traits versus 46 with lower; whereas there were 32 men who had higher levels of PDA traits versus 13 with lower levels). As these sub-samples were small in size, it may be necessary to conduct future research with larger samples. In the meantime, these findings provide signposting for further exploration of this topic.

Gender by itself had a strong relationship with AQ scores, males typically scoring more highly than females, but there was no relationship between gender and EDA-QA scores. It is possible that, as the AQ is partially based on DSM-IV (1994) criteria, it does not account for more recent understanding and hypotheses regarding female presentation of ASD (e.g., Eaton, 2018; Kreiser & White, 2014; Kopp & Gillberg, 1992). This may explain why males tended to score more highly on the measure – the questions in the AQ tend to reference more stereotypically male symptoms. It is possible that were a psychometric tool used that measures ASD traits as reflected by the different genders (and potentially even includes questions about gender identity, as this is a common finding in individuals with ASD – Warrier et al, 2020) this association would be different. At present, PDA is suggested to have a 1:1 ratio distribution between genders (Eaton, 2018), which may explain why there was no relationship between gender and EDA-QA scores. However, further research – especially in adults – is needed to elucidate the

understanding of PDA in males and females; it is currently not known whether gender identification rates are also different as compared to the general population in individuals with PDA.

With regards to the HEXACO personality traits model, there were significant gender differences on the E and X dimensions. Males scored significantly lower than females on E – which is in line with extant research on the HEXACO, suggesting women present more emotionally than men. However, there was no significant difference between genders on the H dimension, as Lee and Ashton (2004) had found. In this study, the X dimension showed significant differences with women scoring more highly than men. It is possible that as the HEXACO includes emotional expression under the X dimension, this may have made a significant difference to the sample's scores. In addition, when AQ scores were examined in relation to the HEXACO dimensions, it was noted that those with lower AQ scores had higher scores on the X dimension. It is possible that this is a direct effect of gender imbalance in this sample.

The specific SBs were also examined in relation to gender. Chi-square analysis indicated no significant differences by gender across any of the behaviours except calling or texting, and the "Other" SB item. Additionally, when the items were categorised according to whether they instituted indirect contact (e.g., fantasising, surveilling, or electronic communications) direct non-violent contact (e.g., contact of family and friends, following or loitering, or showing affection) or direct violent contact (e.g., threats to self-harm, property damage, inappropriate comments, or gestures) the gender proportions between these categories were almost identical. Chi-square analysis indicated no significant difference between the proportions of each gender that fell into these categories.

Whilst there are no rates available with which to compare the gender proportions on specific SBs, by descriptions mentioned in other studies (particularly Sinclair & Frieze, 2000) they appear similar. Men appeared to engage in more direct and non-violent behaviours, whereas women appeared to engage in more indirect contact. If comparing the severity categories created here to the behaviour categories in Sinclair and Frieze (2000), it is possible to draw some parallels; most participants in this study would appear to have engaged in surveilling behaviours (classified as e.g., waiting for or

following them, spying on them, or trying to find out information about them), and men engaged in slightly more approach behaviours (e.g., giving gifts, sending communications, or asking them out as friends). These fall under the indirect and direct non-violent contact categories in this study. Interestingly, Langhinrichsen-Rohling et al (2000) found that perpetrators' reported friendship with their targets was significantly associated with unwanted pursuit. It is possible that the item, "I believed [the target] reciprocated my feelings" would similarly be significantly associated with the overall frequency of SBs in the sample.

Results exploring the specific differences between high- and low-scoring participants on the AQ and EDA-QA are also presented, to understand whether this elaborated on the relationship presented in the previous chapter. These indicate that there were no significant differences between high- and low-scoring participants on the AQ with regards to perpetrating SBs, but high-scoring participants on the EDA-QA were significantly more likely to perpetrate SBs than low-scoring participant on the EDA-QA. In addition, as stated above, there were significant differences between high- and low-scoring participants on the AQ on the X dimension, namely that participants lower on the AQ scored more highly on the X dimension (i.e., individuals with less autistic traits are more extroverted, and vice-versa). This is an expected finding; studies utilising the Big Five personality model have indicated that individuals with ASD tend to show lower Extraversion (e.g., Austin, 2005; see further research presented in the next chapter). This was also found with respect to high- and low-scoring participants on the EDA-QA; high-scoring participants on the EDA-QA also showed lower A and C dimensions scores than low-scoring participants on the EDA-QA – i.e., individuals with more PDA traits were less conscientious and agreeable to others. It is interesting, however, to hypothesise why might lower X dimension scores be present in both high-scoring AQ and EDA-QA participants, if gender appears to relate to high and low X dimension scores as well. It is possible that this is where the research discussed in the introduction regarding presentation of ASD in different genders applies, and this is one of the ways in which ASD modulates observed personality differences between genders.

Bucher et al (2019) found that – using the FFM personality traits model – individuals who fared worse on treatment and therapy outcomes showed lower A, lower C, lower E, and lower X scores on personality assessments. This suggests that individuals with a more severe degree of psychopathology are likelier to show these traits. In this sample, lower X (using the HEXACO personality model) lower A and lower C indicated higher scores on the EDA-QA, and lower X also indicated individuals with higher scores on the AQ. This fits with the observed results of Bucher et al's (2019) meta-analysis. In this sample it is possible to suggest that a higher degree of psychopathology in individuals with PDA traits is related to perpetration of SBs, and this does not appear to be impacted by gender.

Future research into the effects of gender in the context of neurodevelopmental conditions on stalking perpetration would be beneficial in that it may help elucidate motivations for SBs; identify responses to potential environmental stressors that may trigger episodes of SBs and unwanted pursuit; and would expand on our understanding of gender identity in neurodevelopmental conditions, particularly as this study identified some participants whose inclusion in the 'Other' gender category was associated with specific SBs. In particular, it would also be helpful to identify whether women assessed by a psychometric tool designed to identify ASD in females would show any different associations with SBs.

Chapter 6: General Discussion, Conclusions, and Implications

The aim of this thesis was to understand Autism Spectrum Disorders (ASD) and Pathological Demand Avoidance (PDA), a related behavioural profile, in the context of stalking behaviours (SBs). To do so, it was essential to first understand the influence that clinical factors may have on the perpetration of SBs. It was also important to examine whether the methodology of data collection was appropriate, especially as the topic – stalking behaviours – was sensitive and could have caused distress to some participants. The empirical studies within this thesis intended to establish whether there was a link between ASD, PDA and SBs; explore whether this link was reasonable in the context of present literature on stalking behaviours and dating violence; and to explore whether individual differences, in the form of personality dimensions, would be able to elaborate on some of the findings. The gender distribution of the sample and the effects it may have had on the results was also explored.

Summary of Findings

A systematic review was conducted reviewing the presence and prevalence of clinical factors and diagnoses in samples of convicted or referred stalking perpetrators, with a view to identify some of the influences which these clinical diagnoses may have on the stalking behaviours themselves. The systematic review identified 15 studies matching selection criteria and concluded that psychotic illness, personality disorders, and substance misuse were the most common diagnoses in the convicted or referred stalking perpetrators population. Psychotic illness was concluded to contribute to less violent episodes of stalking perpetration, usually focussed on public figures or strangers. The duration of target-following was also on average longer than in stalking perpetrators without psychotic illness. In contrast, personality disorders contributed to more frequent (though shorter), and more violent episodes of stalking perpetration, with a higher likelihood of re-offending. They were also noted primarily in stalking perpetration committed against ex-

intimate partners. Those diagnosed with substance misuse disorders tended to be more violent in stalking perpetration.

Importantly, this review did not find studies eligible for inclusion which considered intellectual difficulties or neurodevelopmental disorders, suggesting that whilst such studies existed, more were needed, and of better quality, to validate and expand the evidence base on this topic.

The methodology chapter reviewed the utility of Internet-mediated research methodology, namely Internet-mediated surveys and questionnaires (IM-SQ), in forensic psychology research. Using Internet-mediated research in forensic psychology is important for several reasons. Data collection is spread over a wider recruitment pool, enabling study reach to more individuals; this also promotes cross-cultural studies as the reach is farther geographically. Using IM-SQ enables easier access to members of "hidden populations" (so named as individuals have no visibly identifying features outside the Internet space) and whose data is as valid to use as data collected from paper-and-pencil surveys. Using IM-SQ can also increase the feeling of privacy and anonymity, which enables participants to report more sensitive, antisocial, and potentially illicit behaviours. Finally, the data can be stored securely to retain participant anonymity, and various organisations publish research and ethical guidelines regarding the usage of this data (see BPS guidelines for Internet-mediated research, 2017; and the General Data Protection Regulations, 2016).

It is also important, however, to note the drawbacks of this method: for example, recruitment advertisements may reach a wider audience, but without emphasising benefits, providing incentives, or without participant motivation to engage, it will still be difficult to recruit participants. Socially desirable responding does not occur to a lesser extent in IM-SQ, suggesting that it will continue to be a potential issue in any survey distribution mode. Ethical issues can arise during data collection in studies on antisocial behaviours, for example if a participant discloses on-going abuse or intent to harm themselves or others: in interviews or face-to-face studies, researchers can directly refer to safeguarding if they feel something is wrong. However, in cases of anonymised research it can be significantly harder to do so, but research bodies (e.g., private research companies; the British Psychological Society and professional registration bodies; universities) have policies that direct researchers how to refer such information to official safeguarding processes

(e.g., see Revealing Reality's (2018) research policies). And finally, the security of Internet-collected data, whilst strong due to software and technological advances, can still breached, whether maliciously or due to human error.

Two empirical studies were then conducted to explore ASD and PDA more closely in the context of stalking behaviours.

The first study examined the relationship of ASD and PDA to stalking behaviours in the context of pre- and post-romantic relationships. additional analyses examined whether symptoms of Attention Deficit/Hyperactivity Disorder (ADHD), often comorbid in ASD and in clinical presentations of PDA, were also predictive of SBs. They also examined whether strategic emotional control, apparent in the clinical presentation of PDA, could serve as a satisfactory explanation to possible motives for perpetrating SBs in ASD and PDA. Strategic emotional control was also selected for exploration as a possible underlying mechanism due to evidence suggesting that stalking can be perceived as a form of dating violence, in which strategic emotional control may play a part; given that individuals with PDA are often described as having an anxiety-based need for control and turbulent relationships, it was of interest to understand whether strategic emotional control was a factor in this and in stalking perpetration. The analyses also examined the personality profiles of individuals who perpetrate SBs and of individuals with PDA were explored to better understand individual differences, using the HEXACO personality model – comprising Honesty-humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. The study found that PDA predicted SB perpetration in relation to romantic relationships significantly, and that ASD did not. In addition, it was found that ADHD, whilst correlating significantly with PDA and ASD, did not predict SB perpetration (see also Egan et al, in press) although strategic emotional control had a significant correlation with both PDA and SBs. The mediation analysis showed no evidence that strategic emotional control could explain the predictive relationship between PDA and SBs. The personality dimensions found to be most predictive of SBs were low Honesty-humility, and high Emotionality. The personality dimensions most predictive of the PDA profile were low Extraversion, low Agreeableness, and low Conscientiousness. The two profiles

did not appear to be related, suggesting individuals with and without PDA have different personality factors which predispose them or make it likelier for them to perpetrate SBs.

The second empirical chapter examined the effect the gender distribution in the sample might have on the observed results and explored the specific stalking behaviours mentioned in the Courtship Behaviour Scale. After further data interrogation it was found that that there were significant differences between males and females in the sample in level of ASD traits – males had scores significantly higher on this than females – and on the E and X factors of the HEXACO personality traits model. An independent samples t-test revealed that women with higher levels of PDA traits were more likely to perpetrate SBs. However, a multiple regression revealed gender on its own did not significantly predict SB perpetration and that its inclusion in the model did not impact the significance of PDA and the HEXACO dimensions predictive of SB perpetration. A chi-square analysis of the specific stalking behaviours by gender was also completed. The specific behaviours showed some frequency differences between genders, but chi-square analysis indicated significant differences only between texting or calling, and "Other" SBs. The gender marked as 'Other' was included for completeness of data but as there were only 7 participants identifying as such their results were not interpreted.

Interpretation of Findings

As discussed in Chapter 1, the link between ASD and antisocial or illegal behaviours is unclear. Reviews such as King and Murphy's (2014) or Rutten et al (2017) could not conclude ASD is a direct cause of offending behaviour, though Im (2016) suggests that some aspects and symptoms of ASD may be indirect risk factors for offending behaviours (see also Allely & Faccini, 2017). Sperry and Stokes (2017) reviewed the symptoms of ASD in relation to stalking, suggesting that the perseveration in the face of negative social cues (see Broadbent, 2011) may indicate when an individual with ASD has become fixated on another individual, whether in social or romantic contexts; the difficulties associated with ASD of perspective taking may make it more difficult to disengage from the behaviour. They suggested that this fixation on

persons may be similar to the circumscribed interests noted in ASD (see Klin et al, 2007) where individuals with ASD become fixated on a particular topic to the exclusion of most other things. Woodbury-Smith, et al (2010) found that offenders with ASD tended to report circumscribed interests which related to their index offences. It is not impossible, then, that disorder-related obsessionality towards specific persons may lead individuals with ASD to inadvertently perpetrate SBs. However, as Chapter 4 finds, there was no relationship between ASD and SBs.

This stands in contrast to existing literature which indicates some relationship between ASD and SB, albeit this association has been studied mostly in clinical case studies and hence anecdotally, rather than experimentally and in a more general population. Stokes et al (2007) found that there was an association between pursuit behaviour and ASD traits in both adolescents and adults, whereby they continued to pursue their targets for longer than individuals without ASD traits. Broadbent (2011) suggests that inappropriate task perseverance in response to negative feedback may translate in social contexts to misinterpreting negative feedback; this may lead to a risk of engaging in SBs. These studies suggest that social cues and their interpretation as intended by the target are important in understanding SB in the Autistic population. Given that this study did not measure response to social cues in the context of SB, it is not possible to determine whether these had an effect on the observed results.

It is possible that the sample used in this thesis, being highly educated and mostly in employment (full or part-time), were – even if individuals with higher levels of ASD traits or ASD diagnoses – persons with more developed coping and management strategies for situations in which they feel they may be more likely to engage in pursuit of others. This may, in turn, prevent potential engagement in SB in high-functioning individuals in this sample.

It is also possible that a relationship between ASD and SB exists – but it is seen more often in forensic or clinical settings. However, Mercer and Allely (2020) did not identify any studies which link ASD with SBs in forensic or clinical settings; it is possible that further research on the prevalence of stalking perpetration by individuals with ASD in forensic samples needs to be conducted.

Another possibility is that compared to the studies by Stokes et al (2007) and Broadbent (2011), this sample largely did not meet criteria for diagnosis of ASD, and rather displayed higher levels of sub-threshold ASD profiles; this in turn may suggest that individuals whose ASD are more pronounced are more likely to engage in SB due to difficulties around social cue interpretation. This suggestion fits with the possibility raised above, of individuals in this sample being more prevalent in higher education and employment; it is possible that sub-threshold caseness of ASD both enables the development of more adaptive management strategies in the community and lowers the risk of engaging in SB. Brugha et al (2011) discusses that in the Criminal Justice System there is a skewed rate of ASD diagnoses (3.9%) versus that in the community (1.8%). A possible reason for this is that diagnoses of ASD are in fact misdiagnoses of PDA. It is possible that this is the case here, too: individuals with ASD can and do commit SB, but it is a possibility that the individuals who are examined and assessed in that context may also display a level of PDA which is not yet recognised by clinicians and researchers.

PDA's predictive relationship with antisocial behaviours (Egan et al, 2019) may be a factor in explaining the inconclusive relationship of ASD with antisocial behaviour. PDA predicts SBs, but there is no direct evidence as to what the motivation behind this is; strategic emotional control, though predictive of SBs, did not serve to explain the relationship between PDA and SBs in the context of romantic relationships.

Extant literature indicates that individuals who perpetrate SB are mostly ex-partners of the victims (over 50%; Mohandie et al, 2006). They are also the individuals who are likely to be the most violent and dangerous towards their victims (Palarea et al, 1999). Coleman (1997) found stalking victims of ex-partner perpetrators reported more verbal and physical abuse in the ex-relationship, as did Carney and Barner (2012). Davis et al (2000) and Mechanic et al (2000) both found that psychological control within the relationship predicted SB by the ex-partners. Burgess et al (1997) identified that batterers in relationships were differentiated in whether they went on to stalk their victims or not based on whether they exhibited control during the relationship over their victim, and that the victim's behaviour impacted or

triggered stalking behaviours much less than physical abuse in these relationships. There is, therefore, evidence to suggest that courtship and domestic violence is related to SB, and that psychological or emotional control is predictive of perpetration of SB (both during and after the relationship – Burgess et al, 1997).

The question is, therefore, why this does not appear to be the pattern noted in this study; whilst the presence of PDA traits was predictive of a higher level of strategic emotional control, only the presence of PDA continued to predict the occurrence of SB significantly in the analysis. It is possible that the EMS measure assessed aspects of strategic emotional control in this sample which do not reflect those typically seen in the courtship or domestic abuse context. It is also possible that the samples tested in the literature – ranging from convicted batterers and stalking perpetrators to victims to college and university students – are different from the sample presented here; the main difference in this case would be the higher-than-average levels of ASD traits and diagnoses present, and that a larger proportion is female. However, as noted in chapter 5, gender differences did not significantly impact the relationship between PDA and SBs, although it was women with higher levels of PDA traits who were more likely to perpetrate SBs; it may be useful to address different types of emotional control in this sub-sample in future research, and potentially compare samples in forensic and community settings.

An alternative explanation to methodological limitations in the context of these findings would be that the pattern of SB predicted by individuals with higher levels of PDA traits is not related to courtship or domestic violence, but instead reflects a different underlying factors. Despite the higher-than-average extent of control and challenging behaviours presenting in PDA profiles, coupled with their turbulent interpersonal relationships (O'Nions 2014, 2018), it is possible that obsessive cognitions or other personality factors better explain the observed results. In "PDA by PDAers" (Cat, 2018), the collated accounts of individuals with PDA living in the community describe the difficulties individuals with PDA face with regards to "obsessions about people" (p. 169) or becoming attached to specific individuals (p. 180). It is possible that despite the apparent sociability and social skills present in the PDA profile, the ability to create and reinforce appropriate interpersonal boundaries

remains a challenge for individuals with this profile; it is possible that in the context of PDA, SBs are an exaggerated response to becoming obsessed with specific individuals. There are currently no studies which can elaborate on this phenomenon in individuals with PDA.

The relationship between PDA/ ASD and OCD is of interest here: Cauda et al (2017) meta-analysed neurological imaging data and observed that there were similar morphologies in white and grey matter in brains of individuals with ASD diagnoses as those of individuals with obsessive-compulsive disorder (OCD) diagnoses. Carlisi et al (2017) found further neurobiological evidence for overlaps between areas of the brain involved in expressing ASD and OCD symptomatology. It is possible, then, that there is a neurological basis for the obsessionality towards individuals noted in the PDA profile; this would predispose individuals with ASD and PDA traits or diagnoses towards becoming more easily obsessed or attached to specific individuals – particularly in the context of relationship dissolution. Sellick et al (in review) identified that PDA, as a behavioural constellation, also presented in individuals with OCD, tentatively confirming the above suggestion, but also concluding that PDA was not a unique behavioural pattern to ASD. It is possible, therefore, that individuals with more PDA traits – who struggle with obsessionality similar to that seen in OCD – may have an increased likelihood of perpetrating behaviours.

Another possibility is that participants with higher levels of PDA traits struggle more than those with lower levels of PDA to cope with relationship dissolution. Individuals with PDA struggle to cope with demands, and a relationship dissolution to some may be perceived as a demand as it compounds an acute change in one's life and is known to be a major life stressor for neurotypical individuals (e.g., Sbarra & Emery, 2005); if neurotypical individuals struggle to cope with relationship dissolution there is no question that neuro-diverse individuals would do too. The question here is what the difference is between individuals who experience relationship dissolution and do not perpetrate stalking, and those who do; this may come down to individual differences in the form of personality traits.

It is possible that the HEXACO model of PDA, which indicated the presence of low Conscientiousness and low Agreeableness – two personality dimensions associated with personality profiles found commonly in offenders (Vize et al, 2018) and perpetrators of SB (Kamphuis et al, 2004) – helps explain the relationship of PDA to SB perpetration. Whilst these traits were not causally related to SBs, it is possible that in the overall profile of PDA they may indicate a marker of higher risk of engaging in antisocial behaviours and SBs in particular. This particular profile may also suggest possible avenues of future research for prevention and support for individuals with PDA at risk of perpetrating antisocial and stalking behaviours. Egan et al (2019) found that using the Five-Factor Model of Personality (Costa & McCrae, 1992) individuals with higher levels of PDA traits showed lower agreeableness (how well one is able to ingratiate themselves with others); lower conscientiousness (how well one is able to organise and consider options prior to decision-making) and lower emotional stability (how well one is able to manage their own emotions). This particular constellation of personality factors is associated with increased likelihood of committing a variety of antisocial behaviours (Dunlop et al, 2011; Miller & Lynam, 2001). Egan et al's (2019) FFM personality profile of PDA is almost identical to the HEXACO profile explored in chapter 4, excepting the Emotional Stability factor; instead, the relationships show low A, low C, and low X. Gaughan et al (2012) suggest that some of the facets of N in the FFM have rotated onto the X factor in the HEXACO. It is possible that this is reflected in this profile, suggesting that the overall personality profile of PDA has not changed significantly; however, it is notable that there is no relationship whatsoever to the E factor, and it is unclear what this means. Low A in this profile may reflect the reported difficulties of individuals with PDA to get along with peers and family (O'Nions et al, 2018). Low C in this context may reflect the impulsivity and difficulties with routine due to demand avoidance which individuals with PDA experience (O'Nions et al, 2014), but may also reflect difficulties with executive functions, which have been suggested to underlie some neurodevelopmental disorders such as ASD and ADHD (Rosello et al, 2018; Leung et al, 2016). Low X, at this time, has not been explored in PDA; this suggests a more introverted, withdrawn, and passive nature. FFM personality profiles combining high N and low Ex are also

common to multiple profiles of mental health difficulties, such as depression, anxiety, and substance misuse (Trull & Sher, 1994).

This particular profile is also reflected in the wider research in ASD and personality. Austin (2005) found that in students, higher scores on the Autism Quotient (Baron-Cohen et al, 2001) were related to higher N, lower Ex, and lower A in the FFM (partially similar to the PDA profile reported in Egan et al, 2018). Wakabayashi et al (2006) also found high N and low Ex but found low C instead of low A in students. Interestingly, they also found that the FFM does not predict AQ scores, suggesting that there is a considerable variation within ASD that cannot necessarily be accounted for by the FFM. Schwartzmann et al (2016) found that high N in ASD correlated with greater symptom severity, as did lower Ex, C, A and O. This study also found an interesting set of clusters which were predicted by slightly different constellations of the FFM traits; one cluster was reported as high N, low A, and low C – identical to the PDA profile found in Egan et al (2019). The study did not report any additional details about participants in this cluster, so any further conclusions cannot be made. Finally, Vuijik et al (2018) conducted a meta-analysis which confirmed that the most observed FFM profile in ASD is high N and low A, low C, low Ex, and low O.

The HEXACO model showed negative relationship between H and SBs, which is the expected relationship observed in the literature around offending behaviours (Rolison et al, 2013; Međedović, 2017; Van Gelder & de Vries, 2012); it is notable that this relationship was not impacted by the inclusion of gender as a variable in the multiple regression in chapter 5. This overall suggests that individuals lower in honesty and humility are more likely to display traits such as slyness, deceitfulness, and greed (Lee & Ashton, 2008). These are traits, Lee et al (2008) state, that are understandably associated with committing unlawful behaviours. Additionally, high E suggests experiencing more fearful and anxious emotions and being more sensitive to emotional experiences in general; this too is in line with the studies mentioned above. The high E noted here also mirrors the findings on antisocial behaviours in studies using the FFM, namely the presence of high N, suggesting that individuals who are at risk of offending and antisocial behaviours may have more difficulties managing their emotions. Rolison et al

(2013) suggest that overall, individuals at risk of offending may have more difficulties with recognising, processing, and expressing emotions. Van Gelder and de Vries (2012) suggest that offenders who may show variations, such as higher E than others or lower H than others will require different treatment programmes which address different needs; for example, those with higher E may require more programmes on emotional regulation, whereas those with low H may require more work around moral reasoning (for example, the Safer Relationships programme and the Thinking Skills Programme offered via the National Probation Service).

Interestingly, when PDA was added to the model (see chapter 4), the predictive relationships of H and E remained as before, with C becoming positively related to SBs; however, when explored further in chapter 5 it was noted that C was not related to SBs anymore. It is likely that this was an additional impact of gender distribution in the sample, as it was notable that gender had significantly different relationships with the E and X dimensions of the HEXACO model. Individuals scoring more highly on PDA traits scored significantly lower on the C dimension than those with lower levels of PDA traits, and it is possible that gender moderated this relationship in some way. Overall, it is possible that for individuals who are struggling to cope with relationship dissolution, resorting to more frequent and more severe forms of SBs is determined by whether they present with higher levels of PDA traits; lower scores on the H dimension; and higher scores on the E dimensions. If an individual meets all three criteria, it is possible that the likelihood of perpetrating SBs increases.

The HEXACO and FFM models of the PDA personality traits profile can also be compared to both borderline personality disorder and covert narcissism. Green et al (2018) discuss that PDA traits appear not to be unique to the Autism Spectrum, and Egan et al (2019) identified that individuals scoring highly on the EDA-QA also scored highly on different facets of personality disorder traits (the PID-5-BF, Krueger et al, 2013). The EDA-QA measure identifies traits of PDA in adults in the general population who do not score highly on the AQ measure, which suggests the PDA profile identifies not only individuals on the Autism Spectrum, but also individuals who may present with emerging personality difficulties. Based on the findings from the

systematic review in chapter 2 – the connection between SB and Cluster B personality conditions – it is entirely possible that individuals with PDA also express personality traits associated with Cluster B personality conditions, namely Emotionally-Unstable, Narcissistic, and Antisocial personality disorders. Borderline personality disorder (BPD) is characterised by intense and dysregulated emotions; impulsive behaviour; and unstable relationships with others (DSM-5, 2013) – similar in presentation to individuals with PDA; it is noted by Eaton (2018) that ASD, particularly in women, can be misdiagnosed as BPD and this may also be the case for PDA.

Another candidate personality difficulty, covert narcissism (Wink, 1991; Pincus & Lukowitsky, 2009) refers to a more vulnerable form of the recognised profile of narcissism; usually, we tend to think of a narcissist as one who sees themselves as special, superior, and act with entitlement and disregard towards those around them. Whilst covert narcissists also experience self-indulgence and disregard towards others, they also experience anxiety, fear, introversion, and defensiveness when they perceive they have been slighted; Pincus et al (2009) discuss that this occurs particularly in response to perceptions of rejection and criticism. The two conditions have similar FFM profiles and are suggested to be highly correlated (Miller et al, 2010). Miller et al (2010) found the FFM profiles comprised of high N, low A, low C, and low E. They additionally suggested that BPD and covert narcissism form two aspects of a "Vulnerable Dark Triad", similar to the "Dark Triad" (Paulhus & Williams, 2002) of personality, which is used to describe 'darker' personality styles and correlates with perpetration of antisocial behaviours. March et al (2020) found that vulnerable narcissism (as part of the Dark Tetrad, rather than Triad, which also includes sadism) predicted cyber-stalking perpetration in women; this suggests that further research should be conducted around personality disorders or personality styles and 'offline' stalking perpetration in relation to PDA, e.g., by using March et al's (2020) paradigm on samples asked about their offline behaviours post-relationship dissolution.

The HEXACO personality traits profile of PDA may be explained, then, by possible relations of PDA to the wider ASD phenotype and to cluster B DSM-5 personality disorders. This is, of course, but one suggestion of how the HEXACO and PDA are linked to SBs. The systematic review (chapter 2) has

identified that individuals with personality disorders are some of the most likely to perpetrate SBs; the similarities between both the personality and behavioural profile of PDA to BPD and covert narcissism suggest that there is a predisposition within some for individuals to engage in SBs. However, when this personality profile is compared with the HEXACO personality profile of individuals who perpetrate SBs but do not have PDA, there are distinct differences to the extent that the two profiles are almost independent of each other. This raises a question for future research: are the motivations of individuals with and without PDA for engaging in SBs similar? It is possible that personality factors within PDA which are related to perpetrating antisocial behaviours in general are in fact a useful marker for identifying risk, especially in terms of identifying difficulties in coping in the context of relationships.

This idea in turn has implications for prevention – providing additional support and educational resources that are tailored to understanding appropriate interpersonal boundaries whilst reinforcing appropriate social skills, or additional support for managing impulsivity, such as medication and CBT-driven reasoning work, or Acceptance and Commitment Therapy for emotional management. The programmes would also need to account for inherent demands which could present an additional challenge for individuals with PDA. Such demands could be the requirement to follow a targeted agenda within a session, or completing specific out-of-session material, emotional management, or response inhibition during a session. Fortunately, programmes such as Acceptance and Commitment Therapy, when completed with a skilled practitioner, allow a client to bring these difficulties into the session and be used as part of the therapeutic process.

There are further implications for individuals who have already offended. Whilst the above resources can be offered as part of a treatment pathway, understanding the personality and neurodevelopmental profiles of individuals who have perpetrated SBs allows for better formulation of their difficulties, and better tailored treatment options within forensic services.

Clinical and Forensic Implications for Prevention and Support Systems

ASD and PDA, though somewhat different in presentation, share a core difficulty of deficits in social skills. In ASD this appears as lack of eye contact, difficulties with turn-taking in conversations, and difficulties in perspective taking and reciprocity (DSM-5; American Psychological Association, 2013). The social deficit in PDA is different in that children with PDA often appear to exhibit good sociability with others and in conversation (Newson et al, 2003). However, when prolonged conversation takes place, it becomes evident that the conversational skill is superficial, and difficulties with eye contact or attempts to monopolise conversation become apparent. It is possible that these difficulties contribute to misunderstanding social boundaries and relationships, which may predispose individuals with ASD or PDA towards inappropriately interacting with or following another person.

Social skills training programmes may offer a preventive or at least a supportive solution to this. The PEERS programme (Laugeson et al 2014) has been reported to significantly improve the social skills of adolescents with ASD. The programme is taught in the classroom, and both parent- and teacher-ratings showed that individuals with ASD who completed the programme gained better peer relationships and understood the social etiquette involved better. Such a programme could be helpful if adapted to account for the demand-avoidant nature of individuals with PDA, who tend to reject rigid structures and programmes placed on them by others. The use of the programme in the school environment means that it may act as a preventive tool prior to, or during the emergence of, following and stalking-like behaviours. However, it may be possible to adapt this programme for use in forensic settings – for example, in secure psychiatric units; the material would need to be adapted to reflect the adult service-users' needs and understanding. This would require pilot programmes in smaller units where the outcomes of such programmes could be better assessed, and perhaps independently examined via staff-rating assessments.

Another platform through which to disseminate social skills training is virtual reality platforms. These act much like an immersive environment using enhanced technologies, and Kandalaft et al (2013) found they are a promising avenue for young adults with ASD to develop, practise, and refine their social

cognition skills. This may not be appropriate for adults with ASD in the forensic settings, however, due to the use of technology; this would need to be thoroughly tested to ensure the technology would be safe to use and could not be tampered with.

As discussed previously, individuals with PDA (and ASD) may struggle to cope with significant life changes, such as relationship dissolution, which may predispose them towards perpetrating SBs. Therefore, symptoms of emotional distress or mental illness should be flagged and raised with professionals, though adults with ASD diagnoses report they struggle to access healthcare services more than individuals without ASD (Calleja et al., 2020; Casagrande & Ingersoll, 2020). In prisons, access to mental health services itself can be difficult (see Simpson & Jones, 2018; Patel et al, 2018); therefore, training should be provided to prison staff and officers to identify obvious symptoms of mental health difficulties, life stressors, and even ASD. It is important to note that while staff can receive appropriate training and apply it well to their work, individuals in custody may still choose to disengage from the services offered – and in this case it is important to develop a supportive relationship with them to identify barriers for engagement.

There are several therapeutic approaches which have been reported as promising for work with individuals with ASD, in order to address such difficulties. Acceptance and Commitment Therapy (ACT; Hayes et al, 2004) is a third wave Cognitive-Behavioural type therapy, which states that whilst experiencing difficult emotions is inevitable in life, they do not have to detract from acting in accordance with one's values; the therapeutic approach promotes committing to act meaningfully in life to achieve and live by one's values. It does this by teaching Mindfulness, an approach similar to meditation, which focuses on recognising the present moment and accepting it as it is, without trying to pass judgment on it.

Pahnke et al (2014) found that ACT was a suitable and effective programme to reduce hyperactivity, stress, and emotional distress in students with ASD, suggesting this may be suitable for young people with ASD who are already in contact with the Criminal Justice System and have been diverted into the forensic healthcare pathway. In addition, Maisel (2018) found that in individuals with ASD, the difficulty of being able to "step back" from a

distressing thought was much greater than in neurotypical individuals. A brief ACT technique, called "cognitive defusion" (which refers to the process of detaching or stepping back from a distressing thought) was also found to be effective in decreasing emotional distress due to such thoughts immediately post intervention. Though the therapeutic gain was not found at 2-weeks follow-up, it suggests that this technique may be suitable for adaptation as a longer-term intervention. This kind of technique may be suitable for individuals who struggle with obsessive thoughts towards specific persons, and particularly if it is likely that the individual will engage in following or SBs towards the specific person. Byrne and Ghráda (2019) found tentative evidence to suggest that ACT is useful for working with aggression and addiction issues in custodial settings, which suggests that in general it may be possible to work with individuals with ASD and PDA in custodial settings with this technique.

Adaptation must also be considered for individuals with PDA, particularly with regards to flexibility of the structure of the therapy. It is possible that sessions to build rapport with the client would be required prior to discussing the ideas underpinning ACT. Even then, the programme would need to be completed in short and consistent stages, due to the impulsivity and inattention symptoms often seen in PDA (O'Nions et al, 2014). Cat (2018; p.299) discusses other coping strategies and therapeutic interventions which were found helpful for adults in the PDA community, such as Compassion-Focussed Therapy (Gilbert, 2009) which supports individuals to develop self-compassion in place of shame and guilt – emotions which may follow significant difficulties in life; shame is also significantly related to offending and its being overcome assists deterrence and rehabilitation (Tibbets, 2003; Svensson et al, 2013; Mullins & Kirkwood, 2019). Kolt and Gilbert (2018) have also provided a chapter aimed at practitioners in forensic settings with suggestions on how to use this approach in custodial and medico-legal settings.

In terms of programmes addressing stalking behaviours, Rosenfeld et al (2007) suggested after a preliminary trial that Dialectical Behaviour Therapy (DBT; Linehan, 1993) – a therapy developed primarily to support individuals with borderline personality disorder to manage their emotions, self-injurious

behaviour, and interpersonal relationships more effectively – was suitable for treatment of stalking perpetrators. Of the 14 participants who completed the programme (of an initial 28) none reoffended at follow-up a year later (though it was unclear what the differences were between those who dropped out and those who remained). DBT may be useful in treatment stalking behaviours due to the high prevalence of cluster B personality disorders found in samples of stalking perpetrators (Rosenfeld, 2003). DBT is a highly adaptable programme, having been re-written for adolescent, forensic, and intellectually disabled populations (Rathus & Miller, 2014; Berzins & Trestman, 2004; Ingamells & Morrissey, 2014). It is not impossible, therefore, that it can be adapted to suit the ASD and PDA populations.

Finally, some consideration should be given to the training of parents, teachers, and professionals who come into contact with the ASD and PDA populations. Whilst awareness of ASD is consistently growing and it has been a recognised spectrum of conditions for over half a century, PDA still attracts much controversy in terms of its diagnosis or even recognition (as it is not included in the major diagnostic manuals available today and can be argued to present as other conditions, such as ADHD, Oppositional Defiance Disorder, Conduct Disorder, or other personality disorders – Eaton, 2018). The National Autistic Society recognises PDA as associated with ASD, and has links with the Pathological Demand Avoidance Society, who work to raise awareness of the condition and offer workshops for parents and teachers which teach the skills necessary to work with individuals with PDA (particularly children).

Given that training on PDA at this time is still introducing the condition and effective management strategies mostly to the home and educational settings, the forensic field may be somewhat lagging in understanding it. It is therefore important, in terms of prevention, to continue to educate parents and teachers about possible harmful behaviours that children with PDA may exhibit and how to support them to move away from these behaviours, especially in terms of coping with the anxiety that leads to the need for control and associated demand avoidance. For professionals working with children, adolescents, and adults with PDA in the forensic field, more training should be introduced, raising awareness of PDA; and how it may fit into the formulations of individuals who have offended and have been diagnosed with the condition.

Such formulations would be able to better account for the clinical and forensic presentation of offenders with PDA, and importantly, direct professionals towards identifying, developing, and refining appropriate and helpful treatment pathways.

Legal Implications: ASD and PDA in the Criminal Justice System

Allely (2015) identified the significant difficulties that individuals with ASD face in the criminal justice system – during Police interviews; in the courts; in the sentencing given to offenders with ASD; and in prisons. In a systematic review Railey et al (2020) identified that individuals with ASD who interacted with the criminal justice system were more likely to have had adverse childhoods and receive a delayed diagnosis of ASD; in addition, they identified that many individuals presented with extremely varied comorbid conditions including ADHD, personality disorders, psychoses, and behavioural difficulties. In terms of Police interviews, they echo Allely's (2015) concerns that the processes, especially if not handled sensitively by the interviewers, can cause unnecessary anxiety and distress to individuals with ASD and may even lead to false confessions, especially when considering some memory impairments in individuals with ASD (e.g., memory recall based on familiarity rather than actual events). Allely (2015) also identifies that the manner of autistic individuals may be at odds with perception of law enforcement officers; where asked literal questions and responding truthfully, law officers may instead perceive a disagreeable or antisocial manner. If called upon in court, legal personnel who are not familiar or trained in recognising and working with individuals with ASD may consider this disrespectful, which may impact the proceedings. Programmes such as Appropriate Adults may be in place to offer support, but as stated above, individuals assisting in these programmes must be appropriately trained. Farrugia and Gabbert (2019) found that Appropriate Adults often remained passive in Police interviews with vulnerable individuals when they should have intervened; and when intervention did take place, it did not account for the vulnerable individual's specific needs. This suggests that even with the programme in place, sufficient training is still required.

In prisons, Railey et al (2020) identified that individuals with ASD may actually prefer the routine provided by custodial regime; however, identifying ASD in the prison setting, particularly in those who are considered higher-functioning and have not been identified as having ASD in the past, may be a difficult task. O'Sullivan (2019) considers that despite prison staff having awareness of ASD features, actual screening tools may be inappropriate to use in the forensic population and there is little training in recognised ASD assessments (e.g., ADOS or ADI) for prison staff. It is therefore more difficult for custodial staff to consider what they can offer in terms of support to such prisoners.

Individuals with PDA may face all these difficulties too with the added challenge of demands arising from every aspect of the legal and custodial processes: comorbidities that lead to challenging behaviours and unseen symptoms; facing difficulties with the rigidity of the court and legal process; pressure in Police interviews leading to severe anxiety which may lead to demand-avoidant behaviour; and the prison regimes which may on one hand provide a routine that can support individuals with PDA to cope with uncertainties better, but on more difficult days make it harder to cope with demands of the routine.

The research in this thesis indicates that individuals with PDA may be more difficult to work with due to lower A and C HEXACO dimensions, which can present difficulties in professional relationships. In addition, the suggestion of similarities in PDA symptoms to BPD and narcissistic profiles may cause presentation of challenging behaviours, which professionals – unless well trained – may not know how to address. It is recommended that further research into more practical methods of support for individuals with ASD and PDA – and in fact, all neuro-diverse individuals who interact with the criminal justice system – is completed. At the very least, training on compassion and non-judgmental interpersonal styles would be helpful for legal personnel.

Limitations of the Present Thesis

Despite all measures being taken to ensure the validity and reliability of the data collected in this thesis, its analysis, and interpretation, some limitations may remain with regards to data collection design and methodology.

The methodological critique chapter has identified that IM-SQ studies are appropriate for research in forensic psychology, in general. This is particularly due to the increased perceived privacy of the method, which enables participants to disclose more sensitive and antisocial behaviours (Kleck & Roberts, 2012; Joinson et al, 2007). However, whilst studies have identified that Internet-based communications and research are suitable for work with individuals with ASD (Gillespie-Lynch et al, 2014; Benford & Standen 2009) there is no research at present that indicates whether Internet-mediated research is effective in the context of forensic psychology research with the ASD community. It is possible that there are no major differences between individuals with and without ASD engaging with IM-SQ studies on sensitive topics; research by Helverschou et al (2015) found individuals with ASD who have committed an offence answered with honesty when questioned about it by Police and other involved professionals, suggesting that individuals with ASD may respond honestly even to difficult or sensitive questions. The research in this thesis certainly did not seem to be affected by any differences that may occur between participants with and without ASD when responding to IM-SQ items, as the high reliability values indicated. However, further research in this field would help shed light on further needs and adaptations which the ASD community may require to participate in future research.

An additional difficulty in IM-SQ data collection may be the length of the survey used in this research, and possible fatigue and boredom in participants. Individuals with ASD and PDA are often diagnosed with comorbid symptoms of ADHD (Jang et al, 2013; O'Nions et al, 2014; Egan et al, in press) which can impact the ability to concentrate and complete the survey. Though the average time to complete the survey rated at around 30-35 minutes, it is possible that this is still too long for individuals with ADHD. However, the webpage containing the survey did not close automatically when there was inactivity in the survey (i.e., participants not filling out questions) meaning participants could complete the study at their own pace. This hopefully

mitigated some of the fatigue effects and difficulties with sustained focus for participants.

A limitation of the empirical work lies in offering an alternative explanation for motivations for stalking perpetration in ASD and PDA. The extant literature suggests stalking perpetration in ASD occurs in the context of unsuccessful romantic pursuit (Sperry & Stokes, 2017; Stokes et al, 2007). Following the work on stalking perpetration (which suggests that it may be part of dating violence behaviour (Melton, 2007; Dutton & Winstead, 2006; Davis et al, 2000), it seemed appropriate to consider the initial exploration of SBs perpetration in adults in the general population with ASD and PDA in the romantic pursuit and dating violence context.

However, no competing hypothesis was considered for underlying mechanisms driving SBs perpetration other than strategic emotional control. Though it seemed prudent and relevant at the time, further consideration could have been given to other psychological processes which may make individuals with ASD and PDA more vulnerable and predisposed towards perpetrating SBs, such as cognitive rigidity and tendency towards obsessionality (DSM-5, 2013; Newson et al, 2003; Sellick et al, in review).

In addition to this, the study is one of the first to explore SBs in adults in the general population meeting criteria for ASD and PDA, and as such it is prudent that it builds on current available literature and the evidence base. However, the study did not consider SBs outside the romantic pursuit context. It is therefore possible that other relationships between ASD, PDA, and stalking were overlooked. Future research examining further the role of PDA traits in the general population in SB perpetration would need to look at other mechanisms of fixation by individuals on others, perhaps across different contexts of pursuit. This may include studies exploring degree of fixation on others both via questionnaires and neuroimaging; and studies examining initiation of social contact or romantic contact towards others. For example, Fay (2020) used a paradigm of multiple relationship-dissolution scenarios to measure whether participants, who were either induced to ruminate on the scenario or not, would pursue the target in the scenario; this study found that different motivations underlay each type of pursuit behaviour based on the ORI scale (Spitzberg & Cupach, 2008). An adapted paradigm allowing

exploration of this within neurodevelopmental disorder would help shed light on different motivations for stalking perpetration, and perhaps – with an added condition for pursuing non-romantic relationships – would enable exploration of pursuit under different contexts. Studies focussing on fixations on other people could adapt scales on e.g., rumination (Roger et al, 2011) or pursuit behaviour towards celebrities, which if changed to reflect a different target may be adequate; the Celebrity Attitude Scale (McCutcheon et al, 2004) in particular may be suitable as it assesses behaviours which are deemed "intense" and "pathological" in terms of fixations and obsessions towards others. In addition, studies on women who have higher levels of PDA traits versus women with lower levels of PDA traits in neuro-diverse and neurotypical samples, using the above paradigms, would help elucidate the results found in this study.

As the discussion identified thus far, ASD (and PDA) may present with significant levels of comorbid diagnoses, and these may have an impact on how individuals cope with relationship dissolution and the predisposition towards perpetrating SBs. However, no validated measures were used to identify further mental health or neurodevelopmental conditions, nor any measures for traits of personality disorders; this would have been helpful in terms of elaborating the relationship between PDA and SBs, particularly given the links identified between personality disorders and SBs in chapter 2, and that the HEXACO personality trait profile of PDA is reminiscent of BPD and covert narcissism as discussed above. Therefore, future studies exploring the PDA profile would benefit from adding validated measures for assessment of personality disorder traits or mental health conditions. Such measures would need to be valid and reliable for use in the general population, but also be suitable for researchers who are not necessarily trained to use the DSM-5 or ICD-10. Tools such as the PID-5 (Krueger et al, 2012) or the DAPP-BQ (Livesley & Jackson, 2009) have been tested on community samples and appear suitable for use in community-based studies, but care should be taken that researchers use appropriate manuals or ask a trained professional to support their interpretation of the results. Tools for identifying mental health conditions may include the SRQ-20 (see Husain et al, 2016) or the CIS-R

(Lewis et al, 1992), which do not require specific training for use and are beneficial as they are relatively short and are self-report.

The analysis completed to determine the sample size (see appendix B) determined that N=143 was an appropriate sample size, considering predictors and analysis methodology and accounting for a more conservative significance. However, its sample size calculation was calibrated to account for the possibility of type 1 error (finding a relationship in the data where none exist) rather than a possibility of a type 2 error (a false negative – not finding a relationship in the data where one does exist). It is therefore possible that there are outcomes in this sample which have been missed, especially where significance criteria indicated values of p =.051 to, for example, p =.08 (as these indicate significance criteria of p = .05 was close). A larger sample would have guarded against this issue, and future studies should ensure consideration for this and an appropriate sample size.

Implications for Future Research

Future research building on the work of this thesis touches on both assessment and identification, and prevention and treatment in the fields of both ASD and stalking behaviour research.

Research on PDA would benefit the entire available evidence-base on this condition. Given the knowledge we have now – that PDA can be a risk factor for engaging in antisocial behaviour – it is imperative to understand its causes, the psychological processes inherent to it, and the best methods to support and develop children and young people with the condition so that they do not become vulnerable to engaging in antisocial behaviours.

Due to the overlap between the clinical presentations of PDA and DSM cluster B personality disorders, it may be prudent to assess whether there are similar causes in the development of the behavioural profile. Whilst existing studies of children with PDA do not report familial abuse as present (O'Nions et al, 2018) it is possible that children with ASD and PDA profiles perceive different events as traumatic, which neurotypical individuals may perceive as unpleasant but not traumatic. Furthermore, it is possible that individuals who develop PDA are a subset of children with ASD who are predisposed to developing the PDA profile as a response to trauma, similar to the

development of some personality disorders in response to trauma (Ball & Links, 2009).

Additional research on PDA and stalking perpetration would also be beneficial, as there is reason to further explore the topic based on limitations identified above. Specifically, examining prevalence of SBs outside the context of romantic relationships may be beneficial, as it would determine whether SBs are a behaviour specific to a particular goal (i.e., achieving a romantic relationship). Exploring whether obsessionality towards persons is a risk factor, or mediates the relationship of PDA and SBs perpetration, may also be useful; extending this to individuals with ASD may also help elaborate the relationships found to date between ASD and SB perpetration.

Though educational guidelines exist (see Christie, 2007) on the best methods of teaching young people with PDA, it is possible that further work would be required in order to develop teaching strategies that would suit programmes such as social skill development or awareness of antisocial behaviours. These developed and adapted teaching strategies may also be useful in therapeutic approaches, such as DBT and ACT (as discussed above) and in adapting them to specific needs regarding antisocial behaviours in individuals with ASD and PDA.

More research could also be undertaken to assess the level of awareness and confidence that professionals have in recognising symptoms of ASD and PDA and identifying risk behaviours prior to illicit behaviours occurring. Such research would surely impact not only the lives of professionals but the lives of individuals with ASD and PDA for the better.

Conclusions

This thesis examined Autistic Spectrum Disorders and Pathological Demand Avoidance (a profile related to Autistic Spectrum Disorders) and individual differences in relation to stalking behaviours. A systematic review identified that the most common clinical diagnoses in samples of convicted and referred stalking perpetrators were psychotic illnesses, personality disorders, and substance misuse disorders – suggesting that whilst neurodevelopmental conditions have been studied in relation to stalking perpetration the studies

were not eligible for inclusion, and thus a greater evidence base was needed to assess the role of ASD and PDA in stalking perpetration. A methodological review also examines the utility of Internet-mediated research in the field of forensic psychology, as the empirical portion of the thesis used Internet-mediated surveys to collect the required data. The review focussed on forensic psychology research in general as opposed to specifically working with the ASD community as not enough research exists on this matter in the context of forensic psychology. The empirical study conducted found that PDA predicted stalking behaviours, but ASD did not. Furthermore, though strategic emotional control – suggested by literature to be related to dating violence and stalking behaviours – predicted stalking behaviours, it did not mediate the relationship between PDA and stalking perpetration. It was also found that HEXACO personality model identified two distinct profiles – one of individuals more likely to perpetrate stalking behaviours, and the other of individuals with PDA. These together correlated with the literature on the HEXACO personality dimensions common in perpetrators of antisocial behaviour but were not similar to each other. The findings, taken together, suggest that perhaps motivation for perpetration of stalking behaviours in PDA is not the same as motivation for stalking perpetration in populations of convicted and referred stalking perpetrators or the general population. Finally, the data was examined to assess whether gender was a significant factor in explaining the relationship of PDA to SBs, due to the unequal gender variance in the sample. This study found that gender was not a significant predictor of SBs, and that the distribution of specific stalking behaviours across genders matched available literature, suggesting that the sample was fairly typical when compared with other university and community-based samples examining stalking behaviours.

Suggestions for future research identify the need to develop the evidence base on PDA and ASD in the forensic context and delineate the trajectories and psychological factors which may make individuals with PDA more vulnerable to offending.

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Note that references marked by an asterisk were included in the systematic review chapter.

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Appendices

Appendix A: Full Calculations for Quality Assessment Utilised in Systematic Review

This quality assessment is written by Kmet, Lee and Cook (2004) and includes 14 questions. Each question scored 0 if criteria is not met; 1 if criteria partially met; and 2 if criteria fully met. N/A is used to denote the criteria question does not apply to the study. The scores are summed, and the actual total divided by the maximum possible total of answered questions. E.g., if all 14 questions are answered, a maximum possible total of 28 points can be given; however, if the actual total is, say, 20 points, then the calculation is 20 divided by 28.

The authors estimated that a result of 0.75 is a conservative threshold for inclusion of studies. It was the threshold used for study inclusions in this thesis.

1. Is the research question or study objective sufficiently described?
2. Is the study design evident and appropriate for the purpose of the research question?
3. Is the method or subject and comparison group selection or source information and input variables described and appropriate?
4. Are subject characteristics (and comparison group, if applicable) described?
5. If intervention or random allocation required – is it appropriately described?
6. If investigator blinding required, is it reported?
7. If subject blinding required, is it reported?
8. Are the outcome measures defined and robust to measurement or misclassification bias? Are the means of assessment reported?
9. Is the sample size appropriate for the research question investigated?

10. Are the analytical methods described and justified, and appropriate for the study's purpose?
11. Is a variance estimate reported for main results?
12. Are confounding variables controlled for?
13. Are results reported in sufficient detail?
14. Are the conclusions supported by the results reported?

Question # →	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**Total**
Cavezza et al (2014)	2	1	2	2	N/A	N/A	N/A	2	2	2	1	0	2	2	0.81
Eke et al (2011)	2	1	2	1	N/A	N/A	N/A	2	1	2	2	1	2	2	0.9
James et al (2003)	2	1	2	2	N/A	N/A	N/A	2	2	2	2	2	2	2	0.95
Johnson et al (2016)	2	1	2	2	N/A	N/A	N/A	2	2	2	1	0	2	2	0.81
Kienlen et al (1997)	1	1	1	2	N/A	2	N/A	2	1	2	0	2	2	2	0.75
McEwan et al (2008)	2	2	1	2	N/A	N/A	N/A	2	2	2	2	2	2	2	0.95
McEwan et al	2	2	2	2	N/A	N/A	N/A	2	2	2	2	2	2	2	1
McEwan et al	2	2	2	2	N/A	N/A	N/A	2	2	2	2	2	2	2	1
McEwan et al (2016)	2	2	2	2	N/A	N/A	N/A	2	2	2	2	1	2	2	0.95
Meloy et al (2011)	1	2	2	2	N/A	N/A	N/A	2	2	2	2	1	2	2	0.9
Meloy et al (2000)	2	2	2	2	N/A	2	N/A	1	1	2	1	1	2	2	0.83
Mohandie et al (2006)	2	1	2	2	N/A	N/A	N/A	1	2	2	2	1	2	2	0.86
Mullen et al (2001)	1	1	2	2	N/A	N/A	N/A	1	2	2	1	1	2	2	0.77
Nijdam-Jones et al (2018)	2	1	2	2	N/A	N/A	N/A	2	2	2	2	2	2	2	0.95
Norris et al (2011)	2	1	2	2	N/A	N/A	N/A	1	2	2	2	1	2	1	0.81
Reavis et al (2008)	2	1	2	2	N/A	N/A	N/A	2	1	2	2	1	2	2	0.86
Rosenfeld (2003)	2	2	2	1	N/A	N/A	N/A	2	1	2	1	2	2	2	0.86
Storey et al (2008)	2	1	2	1	N/A	N/A	N/A	2	1	2	2	1	2	2	0.81
Thompson et al (2013)	2	2	2	2	N/A	N/A	N/A	2	2	2	2	0	2	2	0.9

Appendix B: Data Extraction Form Utilised in the Systematic Review

Data Extraction Pro-forma – adapted for P.E.C.O.-Type Studies

What is the influence and contribution of clinical factors to intrusive and stalking behaviours?

Title & Authors

Population:

1. Gender and sample size?
2. What is the age range?
3. What is the recruitment method?

3a. if there is a recruitment bias, have the authors addressed and resolved it?

3b. if blinding and randomisation required for researchers, has this been done? How?

4. Have the psychiatric or criminal histories of participants been collected (if a referral sample)?

4a. if a random sample, have clinically-ratified and validated measures been used to assess presence of clinical difficulties (e.g. MH, PD, LD/ASD, Substance misuse, other)? Which, and what do they measure specifically?

4b. if non-random sample, has DSM-4/5 or ICD-10 used to provide diagnoses?

Exposure

1. What is the theoretical definition of stalking used?

2. How is this operationalised (i.e., what is classified as stalking-behaviours in this study and was measured)?

3. What was the rate of violence in stalking?

4. What is the incidence rate of clinical factors in the sample?

4a. Mental Health factors (number of cases or % of sample); how many were active during index? Was the factor judged to be a significant contributor to the offence? (report significance and statistic)

4b. Personality factors (cases or %); how many showed active symptoms during index? Was the factor judged to be a significant contributor to the offence? (Report significance and statistic)

4c. Developmental factors? Was index suggested to be due to any of these? Was the factor judged to be a significant contributor to the offence? (Report significance and statistic)

4d. Substance misuse histories? Was case misusing during index? Was the factor judged to be a significant contributor to the offence? (Report significance and statistic)

Control

1. Was a control group pre-specified? If no, why?
2. If this is a non-random sample containing more than one clinical factor, were they compared against one another?
3. If this is a non-random sample, was it divided and compared according to any factor that the study is examining NOT related to clinical factors?

   3a. how is the clinical factor relevant to the aim of the study?

Outcomes

1. What was the outcome of the study?

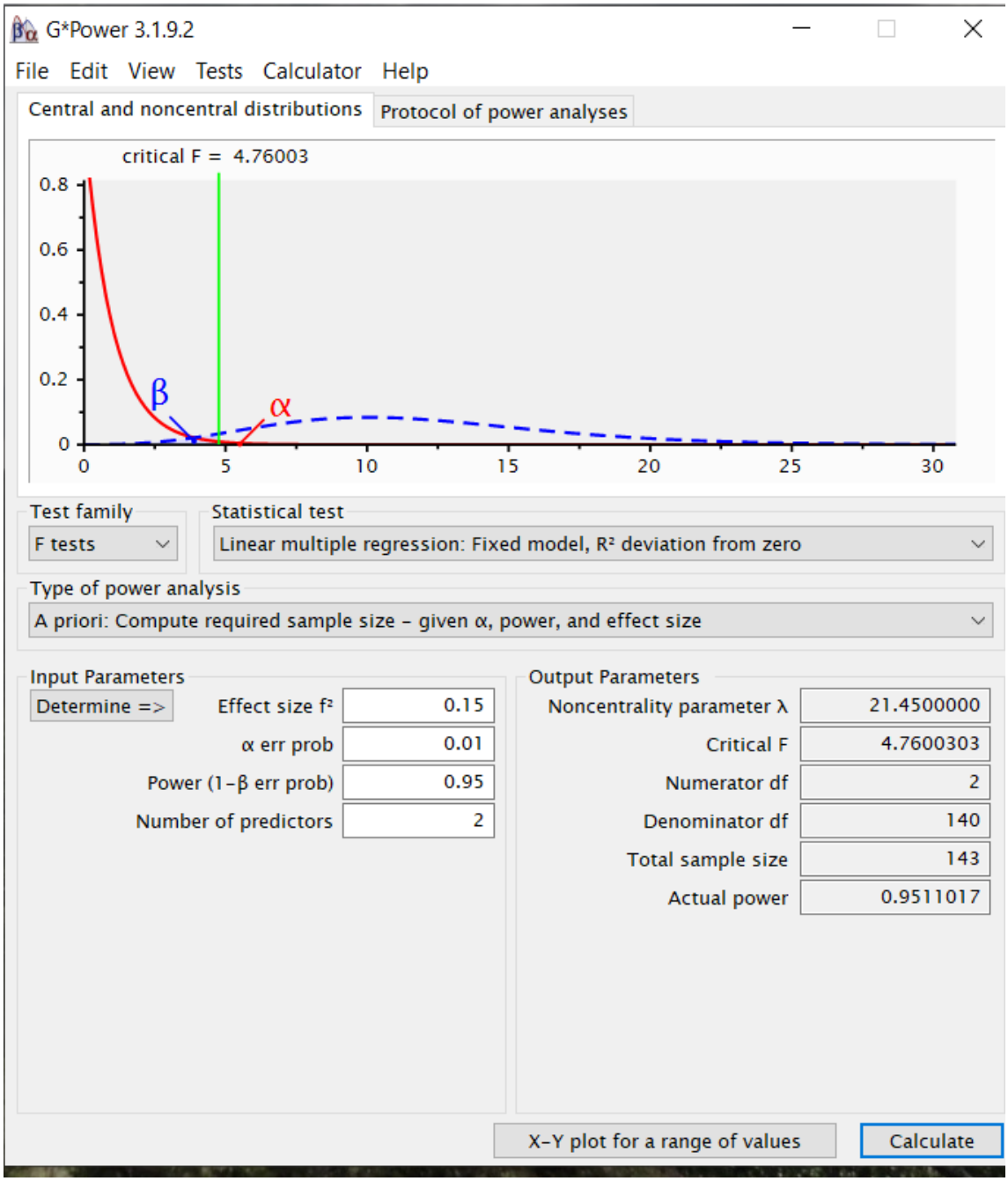
2. Did the authors analyse any relationship between the clinical factors and the severity of the stalking behaviour?

3. Did the authors offer a plausible discussion of the observations?

4. Have the authors identified any limitations and suggested further research, justification, or correction of these?

5. Any possible sub-theme arising? What is it and what were the conclusions?

Appendix C: Power Calculations Output – using G*Power


G*Power 3.1.9.2
File Edit View Tests Calculator Help
Central and noncentral distributions
Protocol of power analyses
critical F = 4.76003
0.8
0.6
0.4
0.2
0
β
α
0 5 10 15 20 25 30
Test family
F tests
Statistical test
Linear multiple regression: Fixed model, R² deviation from zero
Type of power analysis
A priori: Compute required sample size – given α, power, and effect size
Input Parameters
Determine =>
Effect size f²
0.15
α err prob
0.01
Power (1–β err prob)
0.95
Number of predictors
2
Output Parameters
Noncentrality parameter λ
21.4500000
Critical F
4.7600303
Numerator df
2
Denominator df
140
Total sample size
143
Actual power
0.9511017
X-Y plot for a range of values
Calculate

Appendix D: Ethics Approval for Completion of Empirical Studies

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Faculty of Medicine & Health Sciences
School of Medicine
Division of Psychiatry and Applied Psychology
The University of Nottingham
YANG Fujia Building
Jubilee Campus
Nottingham
NG8 1BB
t: +44 (0)115 82 32214
www.nottingham.ac.uk/medicine

Investigators: Omer Linenberg and Vince Egan

Title of study: Relationship of Extreme Demand Avoidance and Autism Spectrum Disorders to Obsessive Relational Intrusions and Stalking Behaviours

Duration of study: Until September 2018

Ethics reference number: 240

Tuesday 4th July 2017

A favourable opinion is given to the above named study on the understanding that the applicants conduct their research as described in the above numbered application, and adhere to all conditions under which the ethical approval has been granted and use only materials and documentation that have been approved. If any amendments to the study are required, an amendment should be submitted to the committee for approval.

David Daley (Professor)

Co-Chair of DPAP Ethics Subcommittee

Amanda Griffiths (Professor)

Co-Chair of DPAP Ethics Subcommittee

Appendix E: Information and Consent page of the Empirical Data Collection Webpage

Division of Psychiatry & Applied Psychology
School of Medicine, Faculty of Medicine & Health Sciences
Developmental and Individual Influences on Difficulties with Relationships
Researcher: Omer Linenberg, msxol@nottingham.ac.uk
Supervisor: Dr Vincent Egan, mczve@nottingham.ac.uk
Approval of Ethics Reference Number: 240

This is an invitation to take part in a research study about relationships, personality traits, and how different individuals pursue relationships and react to difficulties that may occur if the relationship breaks up.

Your participation is voluntary, and you may change your mind about being involved, or decline to answer a particular question. You are free to withdraw at any point before or during the study. Withdrawal does not require a reason. Once you have completed and submitted the questionnaire it is not possible to withdraw the data because we won't know who you are.

What is the project about?

We are interested in comparing how people with and without Autistic Spectrum Disorders pursue relationships, how they respond to difficulties within relationships, and how they may act once these relationships are over. Some people can become very upset when faced with difficulties concerning social and romantic relationships, and a few engage in acts that reflect this distress – sometimes, even behaviours that seem very dramatic or uncharacteristic of the person normally. This questionnaire asks about behaviours ranging from minor to extreme reactions, so that we may capture as large a range of behaviours as possible.

Who is being asked to take part, and why?

This study is available for anyone above the age of 18 who speaks fluent English to participate. In particular, if you think you may have an Autistic Spectrum Disorder, we would appreciate your participation. This will enable us to collect a large range of responses, which may show us if participants scoring more highly on the Autism Spectrum respond differently to participants scoring less highly on the Autism Spectrum.

What will I be asked to do?

You will be asked to complete some basic questions, such as age and gender, as well as level of schooling and your employment. You will then be asked to complete 7 questionnaires; this process should take about 30 minutes.

Will the research be of any personal benefit to me?

This study may not be of any benefit to you personally. However, we hope that the results will add to the growing literature on individual differences in relationships, and particularly on how different people react to difficulties in seeking social and romantic

relationships; difficulties within those relationships; how they may react when these relationships end; how frequent these difficulties may be; and if persons on the spectrum behave differently under such circumstances.

What will happen to the information I provide?

We believe there are no known risks associated with this research study; however, as with any online related activity the risk of a breach is always possible. We will do everything possible to ensure your answers in this study will remain anonymous. We will minimize any risks by not requesting personal information that may identify you, and use only a number to identify your responses. The data collected will be stored securely on a password-protected computer accessible only by the researcher and research supervisor. It may be viewed by individuals at the University of Nottingham who wish to check the study, to ensure it is carried out correctly. All will have a duty of confidentiality to you, as a research participant. Computer security at the University of Nottingham is currently inclusive of the highest level of cyber-security measures available.

What will you do with the data?

The results of the study will form a chapter in my doctoral thesis in forensic psychology. This study may be published in scientific journals and presented at scientific conferences. The data will be reported anonymously, with any identifying information removed.

At the end of the project, all raw data will be kept securely by the University under the terms of the Data Protection Act. The data will not be kept elsewhere. All data will be destroyed 5 years after completion of this study.

If you have any questions or concerns, please don't hesitate to ask. We can be contacted before and after your participation at the above address.

I confirm that I am over 18 years old.

I have read and understood the Participant Information.

I agree to complete the questionnaires presented in this study.

I know how to contact the researcher if I have questions about this study.

I understand that I am free to withdraw from the study without giving a reason.

I understand that for anonymous questionnaire studies, once I have completed the study and submitted the questionnaire, the data cannot be withdrawn.

I give permission for my data from this study to be shared with other researchers in the future provided that my anonymity is protected.

I understand that non-identifiable data from this study might be used in academic research reports or publications.

Appendix F: Demographic questionnaire for empirical data collection with multiple choice options and open-ended items

1. What is your gender? Male, Female, Other
2. How old are you? (in years)
3. How many years have you been in education? Less than 13, 13, more than 13.
4. Where are you from?
5. Are you currently: Full-time student, part-time student, full-time employed, part-time employed, unemployed, retired (can be due to long-term conditions)?
6. If you have a higher degree (e.g., Bachelor's or above, or a Diploma), what is it in?
7. If you are currently employed, what is your occupation?
8. If you have had a previous medical diagnosis of a medical or behavioural problem, please enter it here. If you've had several, please separate them using a comma.
9. If you have no formal diagnosis, but think you have a condition, please enter it here. If you think you have several, please separate using commas.
10. Have you ever been: cautioned, arrested, charged, convicted, or none? If yes, what was the caution/arrest/charge/conviction for?

Appendix G: Psychometrics – The Autism Quotient (Baron-Cohen et al, 2001)

**Please note this is not the full version of the Autism Quotient, as for the purposes of this thesis the Imagination subscale was excluded (see chapter 3).*

Rating options: Definitely agree, Slightly agree, Slightly disagree, Definitely disagree

1. I prefer to do things with others rather than on my own.
2. I prefer to do things the same way over and over again.
3. I frequently get so strongly absorbed in one thing that I lose sight of other things.
4. I often notice small sounds when others do not.
5. I usually notice car number plates or similar strings of information.
6. Other people frequently tell me that what I've said is impolite, even though I think it is polite.
7. I am fascinated by dates.
8. In a social group, I can easily keep track of several different people's conversations.
9. I find social situations easy.
10. I tend to notice details that others do not.
11. I would rather go to a library than a party.
12. I find myself drawn more strongly to people than to things.
13. I tend to have very strong interests which I get upset about if I can't pursue.
14. I enjoy social chit-chat.
15. I am fascinated by numbers.
16. When I talk, it isn't always easy for others to get a word in edgeways.
17. I find it hard to make new friends.
18. I notice patterns in things all the time.
19. It does not upset me if my daily routine is disturbed.
20. I frequently find that I don't know how to keep a conversation going.
21. I find it easy to "read between the lines" when someone is talking to me.
22. I usually concentrate more on the whole picture, rather than the small details.
23. I am not very good at remembering phone numbers.
24. I don't usually notice small changes in a situation, or a person's appearance.
25. I know how to tell if someone listening to me is getting bored.
26. I find it easy to do more than one thing at once.
27. When I talk on the phone, I'm not sure when it's my turn to speak.
28. I enjoy doing things spontaneously.
29. I am often the last to understand the point of a joke.
30. I find it easy to work out what someone is thinking or feeling just by looking at their face.
31. If there is an interruption, I can switch back to what I was doing very quickly
32. I am good at social chit-chat.
33. People often tell me that I keep going on and on about the same thing.
34. I like to plan any activities I participate in carefully.
35. I enjoy social occasions.
36. I find it difficult to work out people's intentions.
37. New situations make me anxious.
38. I enjoy meeting new people.
39. I am a good diplomat.
40. I am not very good at remembering people's date of birth.

Appendix H: Psychometrics – The Extreme Demand Avoidance Questionnaire – Adults Self-Report (Egan, Linenberg & O'Nions, 2018).

Rating options: Not true, Somewhat true, Mostly true, Very true

1. I obsessively resist and avoid ordinary demands and requests.
2. I complain about illness or physical incapacity to avoid a request or demand.
3. I am driven by the need to be in charge.
4. I find everyday pressures (e.g. having to go on a routine trip/ visit dentist) intolerably stressful.
5. I tell other people how they should behave, but do not feel these rules apply to me.
6. I mimic other people's mannerisms and styles (e.g., use phrases adopted from other people to express myself to others).
7. I have difficulty complying with demands and requests from others unless they are carefully presented.
8. I take on roles or characters (from TV/real life) and 'act them out'.
9. I show little shame or embarrassment (e.g., I might throw a tantrum in public and not be embarrassed).
10. I invent fantasy worlds or games and act them out.
11. I am good at getting round others and making them do as I want.
12. I am unaware or indifferent to the differences between myself and figures of authority (e.g. parents, teachers, police).
13. I will still sometimes have a 'meltdown' (e.g. scream, tantrum, hit, or kick) if I feel pressurised to do something.
14. I like to be told I have done a good job.
15. I have a very rapidly changing mood (e.g., I can switch from affectionate to angry in an instant).
16. I know what to do or say to upset particular people.
17. I blame or target a particular person/ persons.
18. I deny things I have done, even if I am caught "red handed".
19. I can be distracted (preoccupied) 'from within' (i.e., absorbed in my own world).
20. I make an effort to maintain my reputation with other people.
21. I sometimes use outrageous or shocking behaviour to get out of doing something.
22. I have periods when I have extremely emotional responses (e.g. crying/giggling, becoming furious) to what others would think small events.
23. I ensure any social interaction is on my own terms.
24. I prefer to interact with others in an adopted role, or communicate through props or objects.
25. I seek to quibble and change rules set by others.
26. I can be passive and difficult to engage.

Appendix I: Psychometrics – Adult ADHD Self-Report Scale (World Health Organisation, year)

Rating options: Never, Rarely, Sometimes, Often, Very often

1. How often do you have trouble wrapping up the fine details of a project, once the challenging parts have been done?
2. How often do you have difficulty getting things in order when you have to do a task that requires organisation?
3. When you have a task that requires a lot of thought, how often do you avoid or delay before getting started?
4. How often do you have problems remembering appointments or obligations?
5. How often do you fidget or squirm with your hands and feet when you have to sit down for a long time?
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?

Appendix J: Psychometrics – Emotional Manipulation Scale (Austin 2007)

Rating options: Strongly disagree, Disagree, Neutral, Agree, Strongly agree

1. I know how to embarrass someone to stop them behaving in a particular way.
2. I know how to make a person feel uneasy.
3. I know how to play two people off each other.
4. I know how to make someone feel ashamed about something that they have done in order to stop them from doing it again.
5. I know how to 'wind up' my close family and friends.
6. I can use my emotional skills to make others feel guilty.
7. I can make someone feel anxious so that they will act in a particular way.
8. I can pay someone compliments to get in their 'good books'.
9. I am good at reassuring people so that they're more likely to go along with what I say.
10. I sometimes pretend to be angrier than I really am about someone's behaviour in order to induce them to behave differently in future.
11. I am not very good at motivating people.
12. I feel that I lack emotional skills.
13. I'm not very good at changing someone's moods, even if doing so would make them more likely to behave in a way that I want them to.
14. I am not very good at giving positive encouragement to others.
15. When someone has made me upset or angry, I tend to downplay my feelings.
16. When someone has made me upset or angry, I often conceal my feelings.
17. I often conceal feelings of anger or distress from others.
18. I don't believe in telling others about my problems - I keep them to myself.

Appendix K: Psychometrics – HEXACO-60 (Lee & Ashton, 20--)

1 = strongly disagree 2 = disagree 3 = neutral 4 = agree 5 = strongly agree

1 _____ I would be quite bored by a visit to an art gallery.
2 _____ I plan ahead and organize things, to avoid scrambling at the last minute.
3 _____ I rarely hold a grudge, even against people who have badly wronged me.
4 _____ I feel reasonably satisfied with myself overall.
5 _____ I would feel afraid if I had to travel in bad weather conditions.
6 _____ I wouldn't use flattery to get a raise or promotion at work, even if I thought it would
7 _____ I'm interested in learning about the history and politics of other countries.
8 _____ I often push myself very hard when trying to achieve a goal.
9 _____ People sometimes tell me that I am too critical of others.
10 _____ I rarely express my opinions in group meetings.
11 _____ I sometimes can't help worrying about little things.
12 _____ If I knew that I could never get caught, I would be willing to steal a million dollars.
13 _____ I would enjoy creating a work of art, such as a novel, a song, or a painting.
14 _____ When working on something, I don't pay much attention to small details.
15 _____ People sometimes tell me that I'm too stubborn.
16 _____ I prefer jobs that involve active social interaction to those that involve working alone
17 _____ When I suffer from a painful experience, I need someone to make me feel comfortab
18 _____ Having a lot of money is not especially important to me.
19 _____ I think that paying attention to radical ideas is a waste of time.
20 _____ I make decisions based on the feeling of the moment rather than on careful thought.
21 _____ People think of me as someone who has a quick temper.
22 _____ On most days, I feel cheerful and optimistic.
23 _____ I feel like crying when I see other people crying.
24 _____ I think that I am entitled to more respect than the average person is.
25 _____ If I had the opportunity, I would like to attend a classical music concert.
26 _____ When working, I sometimes have difficulties due to being disorganized.
27 _____ My attitude toward people who have treated me badly is “forgive and forget”.
28 _____ I feel that I am an unpopular person.
29 _____ When it comes to physical danger, I am very fearful.
30 _____ If I want something from someone, I will laugh at that person's worst jokes.
31 _____ I’ve never really enjoyed looking through an encyclopedia.

32 _____ I do only the minimum amount of work needed to get by.

33 _____ I tend to be lenient in judging other people.

34 _____ In social situations, I'm usually the one who makes the first move.

35 _____ I worry a lot less than most people do.

36 _____ I would never accept a bribe, even if it were very large.

37 _____ People have often told me that I have a good imagination.

38 _____ I always try to be accurate in my work, even at the expense of time.

39 _____ I am usually quite flexible in my opinions when people disagree with me.

40 _____ The first thing that I always do in a new place is to make friends.

41 _____ I can handle difficult situations without needing emotional support from anyone else.

42 _____ I would get a lot of pleasure from owning expensive luxury goods.

43 _____ I like people who have unconventional views.

44 _____ I make a lot of mistakes because I don't think before I act.

45 _____ Most people tend to get angry more quickly than I do.

46 _____ Most people are more upbeat and dynamic than I generally am.

47 _____ I feel strong emotions when someone close to me is going away for a long time.

48 _____ I want people to know that I am an important person of high status.

49 _____ I don't think of myself as the artistic or creative type.

50 _____ People often call me a perfectionist.

51 _____ Even when people make a lot of mistakes, I rarely say anything negative.

52 _____ I sometimes feel that I am a worthless person.

53 _____ Even in an emergency I wouldn't feel like panicking.

54 _____ I wouldn't pretend to like someone just to get that person to do favors for me.

55 _____ I find it boring to discuss philosophy.

56 _____ I prefer to do whatever comes to mind, rather than stick to a plan.

57 _____ When people tell me that I'm wrong, my first reaction is to argue with them.

58 _____ When I'm in a group of people, I'm often the one who speaks on behalf of the group.

59 _____ I remain unemotional even in situations where most people get very sentimental.

60 _____ I'd be tempted to use counterfeit money, if I were sure I could get away with it.

Appendix L: Psychometrics – The Courtship Behaviour Scale – Subscale Social Behaviours (Stokes, Newton & Kaur, 2007)

Although you may not have committed any of the following actions, please read through the list and mark any actions you may have done, particularly towards specific people. You may have done these acts when trying to be someone's friend or partner; during your relationship with them; or after your relationship with them had ended.

Telephoned or texted them a lot; Sent a lot of letters, emails, or instant messages; Sent gifts; Waited outside their home or workplace; Followed them home or to/from work; Monitored their behaviour (e.g., online); Attempted to initiate social contact; Fantasised about them; Shown them a lot of affection (despite not being in a relationship with them); Believed this person should reciprocate your feelings; Made contact with their family or friends; Made inappropriate gestures; Made inappropriate comments; Touched them inappropriately; Stolen or damaged their property; Made threats towards them; Threatened to hurt yourself; Pursued them in a way that could be perceived as threatening; Other; I have never done any of the above.

Appendix M: Debrief Form at the end of the empirical data collection webpage

THANK YOU FOR YOUR PARTICIPATION.

If you have chosen to withdraw part-way through the study, you do not need to do anything further. If you close the web-page now, none of the information you have submitted so far will be recorded or used.

You may read the information below if you would like further details about the study; alternatively, you may close the webpage.

If you have completed the study, and you have any queries or complaints about this study, please contact the Research Supervisor: Dr Vincent Egan (mczve@exmail.nottingham.ac.uk). Dr Egan is a clinical psychologist. Please contact him if this study causes you to have concerns about yourself or other persons in relation to this study; he will review the concern and direct you to appropriate support. If this does not resolve the query to your satisfaction, please write to the Administrator to the Division of Psychiatry & Applied Psychology's Research Ethics Sub-Committee (MS-DPAPEthics@nottingham.ac.uk, +44 (0)115 8232214) who will pass your query to the Chair of the Committee.

In addition, if you would like more information and support about Autistic Spectrum Disorders, please refer to the following organisations:

www.autism.org.uk
www.pdasociety.org.uk

If you feel that you or someone you know may require information or support about any difficulties with mental health, please refer to the following organisations:

www.samaritans.org

www.rethink.org
www.youngminds.org

If you or someone you know are experiencing difficulties in a relationship, the following organisations may be able to offer more information and support:

www.relate.org.uk
info@supportline.org.uk
www.coda-uk.org
www.disrespectnobody.co.uk

Appendix N: Means, standard deviations, and significant post-hoc analyses of one-way ANOVA on non-diagnosed, self-diagnosed, and diagnosed individuals with ASD (for empirical study in chapter 3).

Measure		N	Mean	Standard Deviation
Emotional Manipulation Scale	0	108	51.71	10.35
	1	16	59	9.08
	2	21	95	12.47
Extreme Demand Avoidance Questionnaire – Adults	0	108	46.35	11.26
	1	16	58.06	12.20
	2	21	54.60	12.02
Adult ADHD Self-Report Scale	0	108	17.33	4.79
	1	16	22.18	4.72
	2	21	20.85	4.77
Following Behaviours	0	108	3.84	2.78
	1	16	4.62	2.98
	2	21	3.52	2.60

Table: Means and standard deviations of the sample on 4 measures divided by non-diagnosis, self-diagnosis and concrete diagnosis of ASD. 0 means no diagnosis; 1 means self-diagnosed; 2 means concrete ASD diagnosis.